

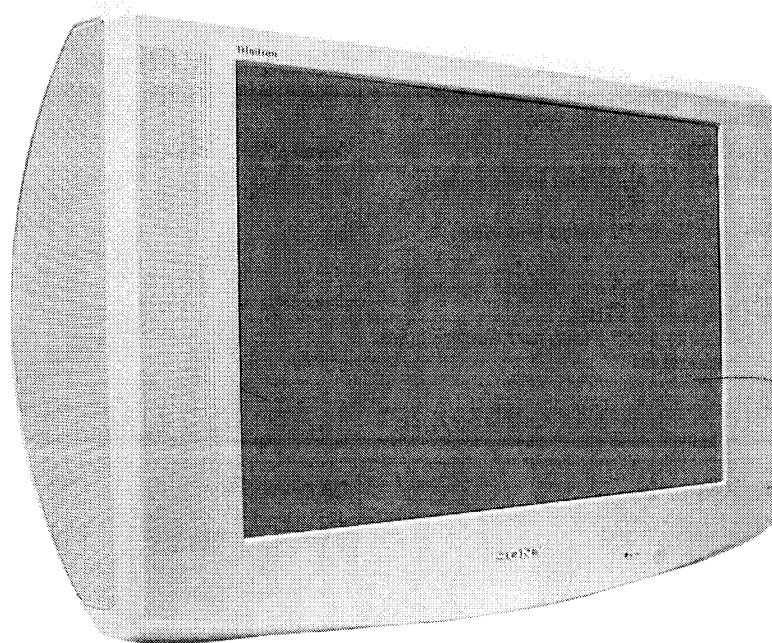
SERVICE MANUAL



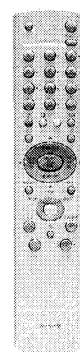
FE-2 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-28LS36B	RM-932	FR	SCC-Q54S-A	KV-32LS36B	RM-932	FR	SCC-Q54R-A
KV-28LS36E	RM-932	ESP	SCC-Q53T-A	KV-32LS36E	RM-932	ESP	SCC-Q53S-A
KV-28LS36U	RM-932	UK	SCC-Q52Q-A	KV-32LS36U	RM-932	UK	SCC-Q52P-A

FD Trinitron



KV-28/32LS36



RM-932

TRINITRON® COLOR TV
SONY®

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.


ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISE LORS DE TOUT DEPANNAGE LE CHÂSSIS DE CE RECEPTEUR EST DIRECTMENT RACCORDE A L'ALIMENTATION SECTEUR.

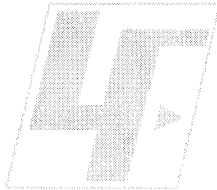
ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY.

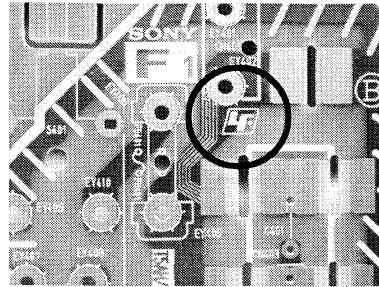
CAUTION

Lead Free Soldered Boards

The circuit boards listed below [Table 1] used in these models may have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation e.g. F1, H1 etc [see examples]. The servicing of these boards requires special precautions to be taken as outlined below.



example 1



example 2

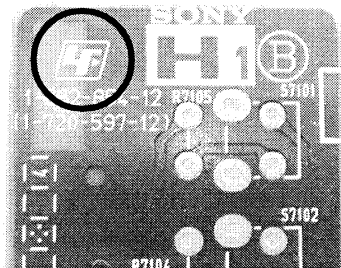


Table 1

Board	Function
C	R,G,B Out
D2	Smart Mode Deflection
D3	4:3 Switching
F2	Power Switch/SIRCS
F3	AC Input/Fuse
H2	Audio In, Y/C In, Headphone In
VM	Velocity Modulation , Dynamic Focus & DQP

It is strongly recommended to use Lead Free Solder material in order to guarantee optimal quality of new solder joints. Lead Free Solder is available under the following part numbers :

Partnumber	Diameter	Remarks
7-640-005-19	0.3mm	0.25Kg
7-640-005-20	0.4mm	0.50Kg
7-640-005-21	0.5mm	0.50Kg
7-640-005-22	0.6mm	0.25Kg
7-640-005-23	0.8mm	1.00Kg
7-640-005-24	1.0mm	1.00Kg
7-640-005-25	1.2mm	1.00Kg
7-640-005-26	1.6mm	1.00Kg

Due to the higher melting point of Lead Free Solder the soldering iron tip temperature needs to be set to 370 degrees centigrade. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.


For more information on the use of Lead Free Solder, please refer to <http://www.sony-training.com>

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
B	B/G/H, D/K, I, L	GERMAN/NICAM Stereo	VHF : E2-E12, F2-F10 UHF : E21-E69, F21-F69, B21-B69 CABLE TV : S01-S03, S1-S20, B-Q HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
E	B/G/H, D/K	GERMAN/NICAM Stereo	VHF : E2-E12 UHF : E21-E69 CABLE TV : S01-S03, S1-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
U	I	NICAM Stereo	I UHF : E21-E69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Picture Tube	Flat Display FD Trinitron Approx 71 cm (28 inches) (Approx 66 cm picture measured diagonally) KV-28LS36 Approx 82 cm (32 inches) (Approx 76 cm picture measured diagonally) KV-32LS36	Sound output	
		Right and Left speaker	2x14W (Music Power) 2x7W (RMS)
Input/Output Terminals [REAR]		General Specifications	
1: 21-pin Euro connector (CENELEC standard)	Inputs for Audio and Video signals. Inputs for RGB. Outputs of TV Video and Audio signals.	Power Requirements	220 - 240V
		Power Consumption	90 W (KV-28LS36) 88 W (KV-32LS36)
2: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs of TV Video and Audio signals. (selectable)	Dimensions	Approx 806x497x540mm (KV-28LS36) Approx 891x564x584mm (KV-32LS36)
		Weight	Approx 43kg (KV-28LS36) Approx 60.5kg (KV-32LS36)
Phono Jacks	Output Connectors variable for Audio Signals	Supplied Accessories	RM-932 Remote Commander (1) IEC designated R6 battery (2)
Input/Output Terminals [SIDE]		Other Features	TV system Autodetection, Teletext Virtual Dolby
Headphone jack	stereo mini jack	Remote Control System : Infrared Control	
Audio inputs	phono jacks	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Video inputs	phono jacks		
S Video input	4 pin DIN		
Design and specifications are subject to change without notice.			

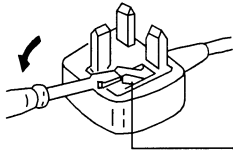
Model Name Item	KV-28LS36B	KV-28LS36E	KV-28LS36U	KV-32LS36B	KV-32LS36E	KV-32LS36U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
Woofer Box	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
Norm B/G	ON	ON	OFF	ON	ON	OFF
Norm I	OFF	OFF	ON	OFF	OFF	ON
Norm D/K	ON	ON	OFF	ON	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	OFF	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Teletext	ON	ON	ON	ON	ON	ON
Nicam Stereo	ON	ON	ON	ON	ON	ON

WARNING (UK Models only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** rating. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by ASTA to **BS 1362**, ie one that carries the  mark.

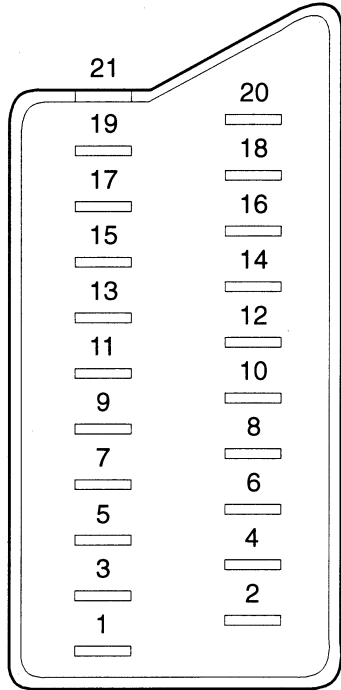
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with a **5AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with a screwdriver blade and replace the fuse.

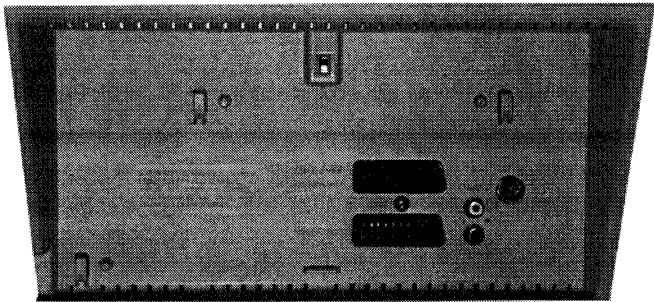
21 pin connector



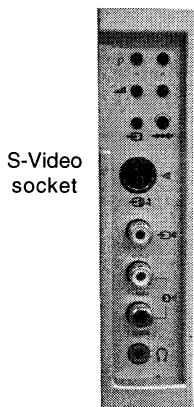
Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedance : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	-	-	Red input	0.7 +/- 3dB, 75 ohms, positive
	-	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Y's signal)	High state (1-3V) Low state (0-0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	-	-	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	-	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Rear Connection Panel



Front Connection Panel



S-Video socket

S Video socket pin configuration		
Pin No	Signal	Signal Level
1	Ground	-
2	Ground	-
3	Y (S signal) input	1V+/- 3dB 75ohm, positive Sync. 0.3V -3 +10dB
4	C (S signal) input	0.3V+/- 3dB 75ohm, positive Sync.

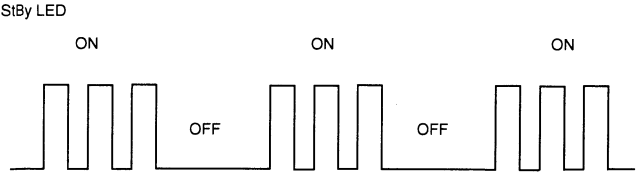
FE-2 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the FE-2 chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1., non fatal errors are reported using this method. Each time the software detects an error it is stored within the NVM. See Table 2.

Table 1


Error Message	LED Code
No error	00
Reserved	01
OCP (Over Current Protection)	02
Not Used	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Not Used	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Jungle controller 8 volts error	11


Flash Timing Example : e.g. error number 3

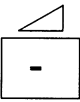


How to enter into Table 2

- Turn on the main power switch of the TV set and enter into the 'Standby Mode'.
- Press the following sequence of buttons on the Remote Commander.


(ON SCREEN DISPLAY)


(DIGIT 5)


(VOLUME -)




(TV)
- The following table will be displayed indicating the error count.

Table 2


ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0
WORKING TIME			
HOURS			2
MINUTES			11

Note: To clear the error count data press '80' on the Remote commander.


SECTION 1 GENERAL




Do you want to start automatic tuning?
Yes No




Auto-tuning
Progress: 01
Channel: C21



No channel found
Please connect aerial
Confirm









Programme
01 TV2
02 TV3
03 C33
04 C34
05 C35
06 C36
07 C37
08 C38
09 C39
10 C40
11 C41
12 C42
13 C43
14 C44
15 C45
16 C46
17 C47
18 C48
19 C49
20 C50



Programme
01 TV2
02 TV3
03 C33
04 C34
05 C35
06 C36
07 C37
08 C38
09 C39
10 C40
11 C41
12 C42
13 C43
14 C44
15 C45
16 C46
17 C47
18 C48
19 C49
20 C50

4 The Auto Tuning menu appears on the screen. Press the OK button to select Yes.



5 The TV starts to automatically search and store all available broadcast channels for you.
This procedure could take some minutes. Please be patient and do not press any buttons, otherwise the automatic tuning will not be completed.
If no channels were found during the auto tuning process then a new menu appears automatically on the screen asking you to connect the aerial. Please connect the aerial (see page 6) and press OK. The auto tuning process will start again.


6 After all available broadcast channels are captured and stored, the Programme Sorting menu appears automatically on the screen enabling you to change the order in which the broadcast channels appear on the screen.
a) If you wish to keep the broadcast channels in the tuned order, go to step 7.
b) If you wish to store the broadcast channels in a different order:
1 Press the  or  button to select the programme number with the broadcast channel you wish to rearrange, then press the  button.
2 Press the  or  button to select the new programme number position for your selected broadcast channel, then press .
3 Repeat steps b)1 and b)2 if you wish to change the order of the other broadcast channels.

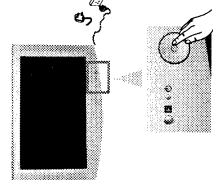


7 Press the MENU button to remove the menu from the screen.



Your TV is now ready for use

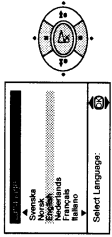
Switching On the TV and Automatically Tuning







- The first time you switch on your TV, a sequence of menu screens appear on the TV enabling you to: 1) choose the language of the menu screen, 2) adjust the picture slant, 3) search and store all available broadcast channels and 4) change the order in which the broadcast channels appear on the screen. However, if you need to change any of these settings at a later date, you can do that by selecting the appropriate option in the  (Set Up menu) or by pressing the Auto Start Up button  on the TV set.

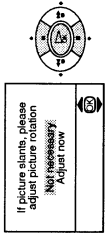
1 Connect the TV plug to the mains socket (220-240V AC, 50Hz).
The first time the TV set is connected, it is usually turned on. If the TV is off, press the  on/off button on the TV set to turn on the TV.
The first time you switch on the TV, a Language menu displays automatically on the TV screen.


- Press the  or  button on the remote control to select the language, then press the OK button to confirm your selection. From now on all the menus will appear in the selected language.

2 Press the  or  button on the remote control to select the language, then press the OK button to confirm your selection. From now on all the menus will appear in the selected language.


- Because of the earth's magnetism, the picture might slant. The Picture Rotation menu allows you to correct the picture slants if it is necessary.

3 Because of the earth's magnetism, the picture might slant. The Picture Rotation menu allows you to correct the picture slants if it is necessary.
a) If it is not necessary, press  or  to select Not necessary and press OK.
b) If it is necessary, press  or  to select Adjust now, then press OK and correct any slant of the picture between -5 and +5 by pressing  or . Finally press OK to store.



continued...

Introducing and Using the Menu System

i Your TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the Remote Control to operate the menu system:

1 Press the **MENU** button to switch the first level menu on.



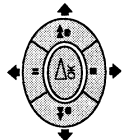
2 To highlight the desired menu or option, press **↵** or **⬅**.

• To enter to the selected menu or option, press **⬇**.

• To return to the last menu or option, press **⬅**.

• To alter settings of your selected option, press **↵** / **⬅** / **⬆** or **⬇**.

• To confirm and store your selection, press **OK**.



3 Press the **MENU** button to remove the menu from the screen.

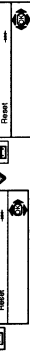


Menu Guide

Level 1 Level 2 Level 3 / Function

PICTURE ADJUSTMENT

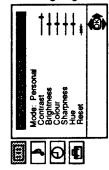
The "Picture Adjustment" menu allows you to alter the picture adjustments.



To do this: after selecting the item you want to alter press **↵**, then press repeatedly **↵** / **⬅** / **⬆** or **⬇** to adjust it and finally press **OK** to store the new adjustment.

This menu also allows you to customise the picture mode based on the programme you are watching:

- ➔ **Personal** (for individual settings).
- ➔ **Live** (for live broadcast programmes, DVD and Digital Set Top Box receivers).
- ➔ **Movie** (for films).



- **Brightness, Colour and Sharpness** can only be altered if "Personal" mode is selected.
- **Hue** is only available for NTSC colour signal (e.g. USA video tapes).
- **Select Reset** and press **OK** to reset the picture to the factory preset levels.

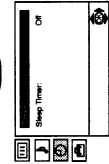
GB

GB

Level 1 Level 2 Level 3 / Function

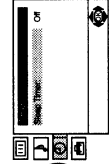
SLEEP TIMER

The "Sleep Timer" option in the "Timer" menu allows you to select a time period for the TV to switch itself automatically into the standby mode.



To do this: after selecting the option press **↵**, then press **↵** or **⬅** to set the time period delay (max. of 4 hours) and finally press **OK** to store.

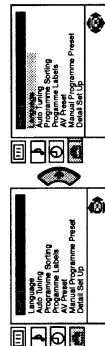
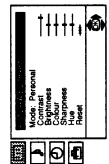
- While watching the TV, you can press the **⏻** button on the remote control to display the time remaining.
- One minute before the TV switches itself into standby mode, the time remaining is displayed on the TV screen automatically.



LANGUAGE

The "Language" option in the "Set Up" menu allows you to select the language that the menus are displayed in.

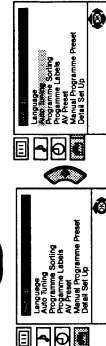
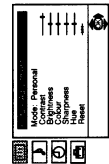
To do this: after selecting the option, press **↵** and then proceed in the same way as in the step 2 of the section "Switching On the TV and Automatically Tuning".



AUTO TUNING

The "Auto Tuning" option in the "Set Up" menu allows you to automatically search for and store all available TV broadcast channels.

To do this: after selecting the option, press **↵** and then proceed in the same way as in TV steps 4 and 5 of the section "Switching On the TV and Automatically Tuning".



continued...

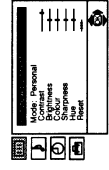
Level 1

Level 2

Level 3 / Function

AV2 OUTPUT

The "AV2 Output" option in the "Detail Set Up" menu allows you to select the source to be output from the Scart connector **Ⓒ-2** / **Ⓒ-3**. You can record from this Scart any signal coming from the TV or from external equipment connected to the Scart connector **Ⓒ-1** / **Ⓒ-2** or side connectors **Ⓒ-3** and **Ⓒ-4**.



i If your VCR supports Smartlink, this procedure is not necessary.

To do this: after selecting the option, press **↵**. Then press **↵** or **⬅** to select the desired output signal: **TV**, **AV1**, **AV3**, **YC3** or **AUTO**.

A If you select "AUTO", the output signal will always be the same one that is displayed on the screen.

A If you have connected a decoder to the Scart **Ⓒ-2** / **Ⓒ-3** or to a VCR connected to this Scart, please remember to change back the "AV2 Output" to "AUTO" or "TV" for correct unscrambling.

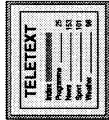
Teletext

i Teletext is an information service transmitted by most TV stations. The index page of the teletext service (usually page 100) gives you information on how to use the service. To operate teletext, use the remote control buttons as indicated below.

A Make sure to use a broadcast channel with a strong signal, otherwise teletext errors may occur.

To Switch On Teletext :

After selecting the TV channel which carries the teletext service you wish to view, press **⏻**.



To Select a Teletext page:

Input 3 digits for the page number, using the numbered buttons.

- If you have made a mistake, retype the correct page number.
- If the counter on the screen continues searching, it is because this page is not available. In that case, input another page number

To access the next or preceding page:

Press **PROG +** (**⏮**) or **PROG -** (**⏭**).

To superimpose teletext on to the TV:

Whilst you are viewing teletext, press **⏻**. Press it again to cancel teletext mode.

To freeze a teletext page:

Some teletext pages have sub-pages which follow on automatically. To stop them, press **⏻** / **⏮**. Press it again to cancel the freeze.

To reveal concealed information (e.g. answer to a quiz):

Press **⏻** / **⏭**. Press it again to conceal the information.

To Switch Off Teletext:

Press **⏻**.

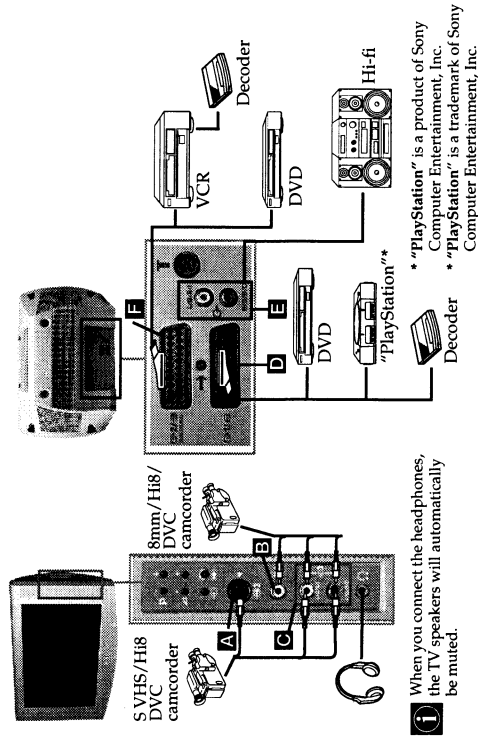
GB

Fastext

i Fastext service lets you access pages with one button push. While you are in Teletext mode and Fastext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the colour button (red, green, yellow or blue) to access the corresponding page.

Connecting Optional Equipment

i Using the following instructions you can connect a wide range of optional equipment to your TV set. (Connecting cables are not supplied).



A To avoid picture distortion, do not connect external equipment to connectors **A** and **B** at the same time.

Connecting a VCR:

To connect a VCR, please refer to the section "Connecting the aerial and VCR" of this instruction manual. We recommend you connect your VCR using a scart lead. If you do not have a scart lead, tune in the VCR test signal to the TV programme number "0" by using the "Manual Programme Preset" option. (for details of how to manually programme these presets, see page 13, step a).

Refer to your VCR instruction manual to find out how to find the output channel of your VCR.

Connecting a VCR that supports Smartlink:

i Smartlink is a direct link between the TV set and the VCR. For more information on Smartlink, please refer to the instruction manual of your VCR. If you use a VCR that supports Smartlink, please connect the VCR by using a Scart lead to the Scart **G-2/-E3** **F**

continued...

Specifications

TV system: I	Sound Output: 2 x 14 W (music power) 2 x 7 W (RMS)
Colour system: PAL, SECAM, NTSC 3.58, 4.43 (only Video In)	Woofer: (KV-28LS35U/32LS35U only) 20 W (music power) 10 W (RMS)
Channel Coverage: I: UHF B21-B69	Power Consumption: KV-28LS35U/LS36U: 90 W KV-32LS35U/LS36U: 88 W
Picture Tube: Flat Display FD Trinitron WIDE	Standby Power Consumption: 0.54 W
• KV-28LS35U/LS36U: 28" (approx. 71 cm. measured diagonally) • KV-32LS35U/LS36U: 32" (approx. 82 cm. measured diagonally)	Dimensions (w x h x d) : KV-28LS35U/LS36U: Approx. 806 x 497 x 540 mm. KV-32LS35U/LS36U: Approx. 891 x 564 x 584 mm.
Rear Terminals G-1/-E 21-pin scart connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output. G-2/-E3 21-pin Scart connector (CENELEC standard) including audio / video input, S video input, selectable audio / video output and Smartlink interface. G audio outputs (Left/Right) - phono jacks	Weight: KV-28LS35U/LS36U: 43 Kg. KV-32LS35U/LS36U: 60.5 Kg.
Side Terminals -E3 S Video input – 4 pin DIN -E3 video input – phono jack -E3 audio input – phono jacks G headphones jack	Accessories supplied: 1 Remote Control (RM-932) 2 Batteries (IEC designated)
	Other features: • Teletext, Fastext, TOPtext • Sleep Timer • Smartlink (direct link between your TV set and a compatible VCR. For more information on Smartlink, please refer to the Instruction Manual of your VCR). • Dolby Virtual • Auto Format

Design and specifications are subject to change without notice.

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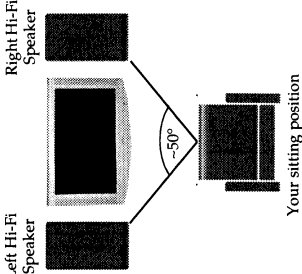
Connecting to external Audio Equipment:

Plug in your Hi-Fi equipment to the audio output sockets **B** if you wish to amplify the audio output from TV. Next, using the menu system, select the "Sound Adjustment" menu. Enter the "Detail Adjustment" option and set "TV Speakers" to "Off".

i The audio level of the external speakers can be modified by pressing the volume buttons on the remote control. Also treble and bass settings can be modified through the "Sound Adjustment" menu.

To enjoy "Dolby Virtual" sound effect through your Hi-Fi equipment:

Place the speakers of your equipment in front of your sitting place and besides the TV set but keep a distance of 50 cm from each speaker to the TV set. Then by using the menu system, select the menu "Sound Adjustment". Next select "Detail Adjustment" and set "Dolby Virtual" to "On".



Using Optional Equipment

- 1 Connect your equipment to the designated TV socket, as indicated in the previous page.
- 2 Switch on the connected equipment.
- 3 To watch the picture of the connected equipment, press the **-E** button repeatedly until the correct input symbol appears on the screen.

Symbol Input Signals

- | | |
|---------------|--|
| Symbol | Input Signals |
| -E1 | • Audio / video input signal through the Scart connector D |
| -E | • RGB input signal through the Scart connector D . This symbol appears only if a RGB source has been connected. |
| -E2 | • Audio / video input signal through the Scart connector E . |
| -E2 | • S Video input signal through the Scart connector F . |
| -E3 | • Video input signal through the phono socket B and Audio input signal through G . |
| -E3 | • S Video Input signal through the front S Video input jack A and Audio signal through G . |

- 4 Press **O** button on the remote control to return to the normal TV picture.

For Mono Equipment

Connect the phono plug to the L/G/S/I socket on the front of the TV and select **-E3** or **-E3** input signal using the instructions above. Finally, refer to the "Sound Adjustment" section of this manual and select "Dual Sound" "A" on the sound menu screen.

Troubleshooting

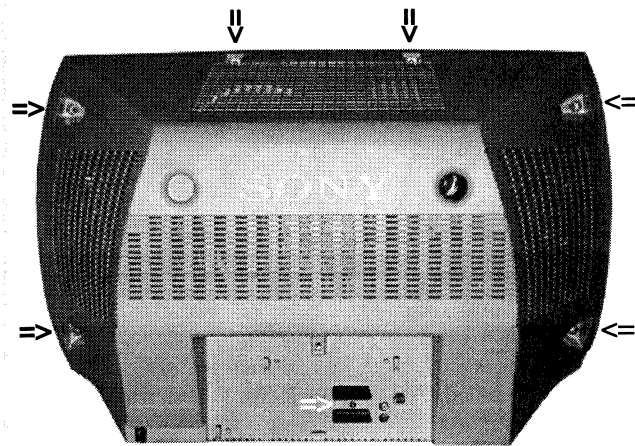
i Here are some simple solutions to the problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark) and no sound.	• Check the aerial connection. • Plug the TV in and press the O button on the front of the TV. • If the standby indicator Φ is on, press TV I/O button on the remote control.
Poor or no picture (screen is dark), but good sound.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to the factory settings.
No picture or no menu information from equipment connected to the Scart connector.	• Check that the optional equipment is on and press the -E button repeatedly on the remote control until the correct input symbol is displayed on the screen.
Good picture, no sound.	• Press the Δ +/- button on the remote control. • Check that "TV Speakers" is "On" on the "Sound Adjustment" menu. • Check that headphones are not connected.
No colour on colour programmes.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to factory settings.
Distorted picture when changing programmes or selecting teletext.	• Turn off any equipment connected to the Scart connector on the rear of the TV.
Picture slanted	• Using the menu system, select the "Picture Rotation" option in the "Detail Set Up" menu to correct the picture slant.
Noisy picture when viewing a TV channel.	• Using the menu system, select the "Manual Programme Preset" menu and adjust Fine Tuning (AFT) to obtain better picture reception. • Using the menu system, select the "Noise Reduction" option in the "Detail Set Up" menu and select "Auto" to reduce the noise in the picture.
No unscrambling or unstable picture whilst viewing a scrambling channel with a decoder connected through the Scart connector G-2/-E3 .	• Using the menu system, select the "Set Up" menu. Then enter to "Detail Set Up" option and set "AV2 Output" to "TV".
Remote control does not function.	• Check that the Media Selector on the remote control is set according to the device you are using (VCR, TV or DVD). • If the remote control does not operate the VCR or DVD even when the Media Selector has been set correctly. Enter the necessary code set as explained on "Remote Control Configuration for VCR/DVD" chapter of this instruction manual. • Replace the batteries.
The standby indicator Φ on the TV flashes.	• Contact your nearest Sony service centre.

i If you continue to experience problems, have your TV serviced by qualified personnel. Never open the casing yourself.

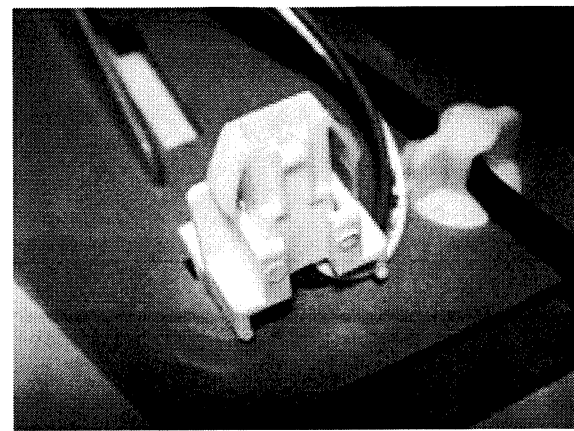
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal



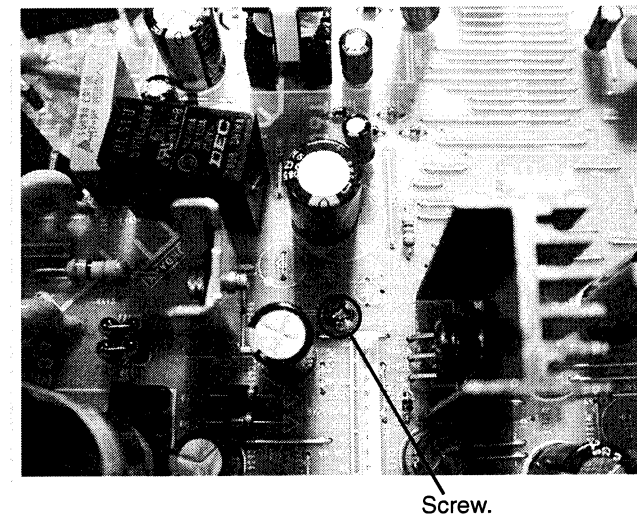
Release the mains power cable from its securing posts. Remove the rear cover fixing screws indicated. Pull the rear cover away from the front beznet. Take care when removing the rear cover not to damage the speaker cables as speakers are fitted inside the rear cover.

2-2. Speaker Connector Disconnection



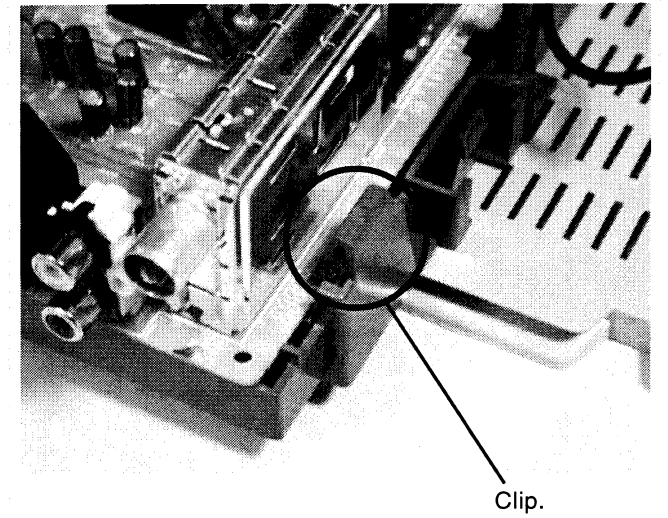
Before completely removing the rear cover disconnect the speaker connectors which are located on the inside base of the beznet.

2-4. A Board PWB Removal [Step 1]



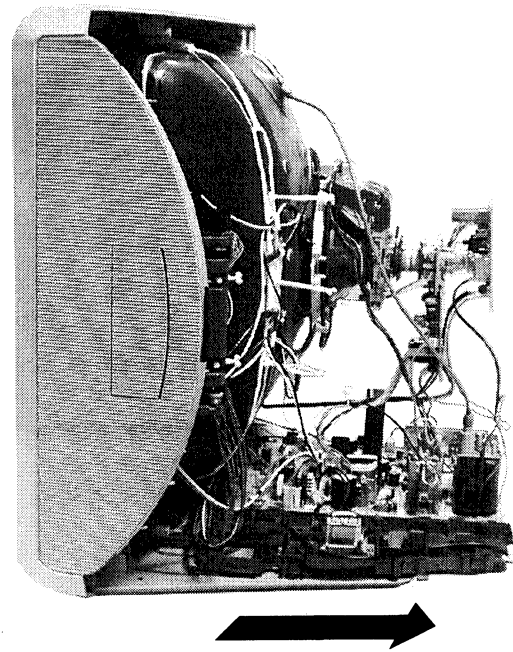
Remove the screw securing the PWB to the main bracket.

2-5. A Board PWB Removal [Step 2]

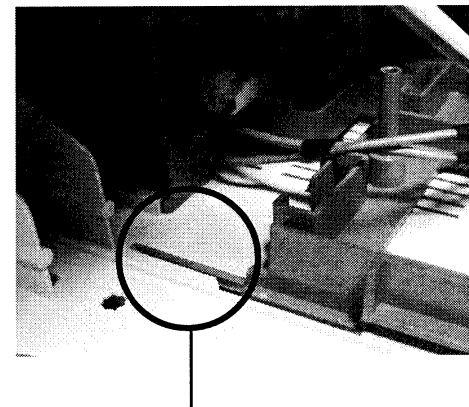


Release the 5 securing clips located at the side and front of the chassis and slide the PWB clear of the bracket.

2-3. Chassis Removal and Refitting

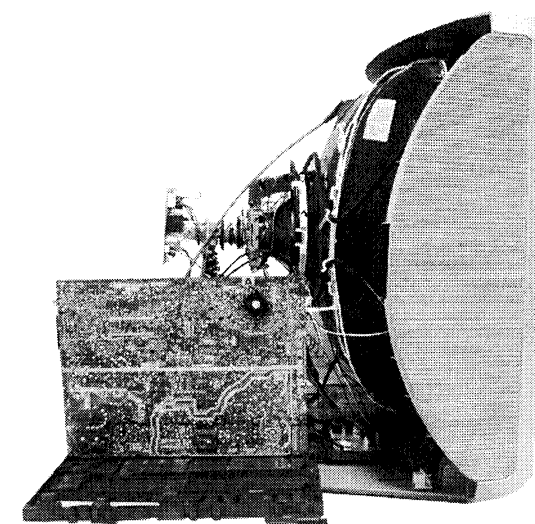


To remove lift the main bracket rear slightly and slide the chassis away from the beznet. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



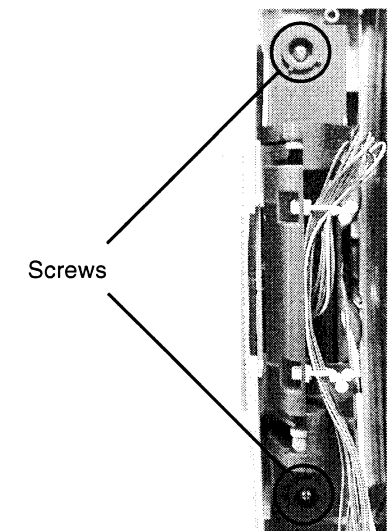
When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

2-6. Service Position



Place the A Board PWB in the position indicated to carry out servicing.

2-7. Side Control Module Removal

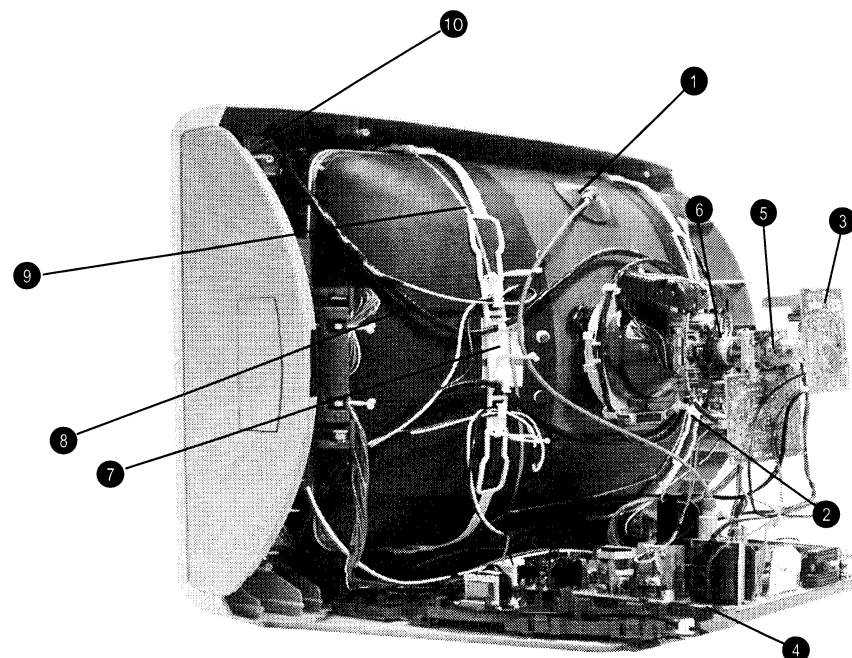
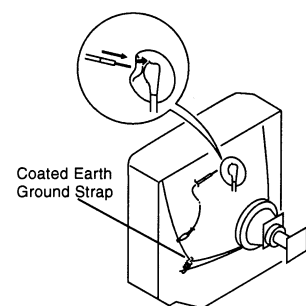


Remove the two screws fixing the user control module to the side of the set. The control module can then be removed by sliding it towards the rear of the set allowing access to the H2 Board.

2-8. Picture Tube Removal

WARNING: BEFORE REMOVING THE ANODE CAP

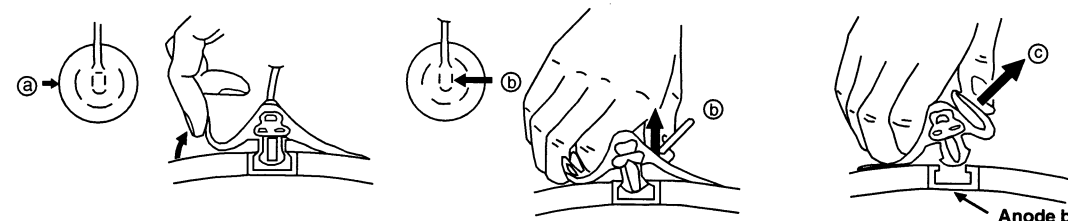
High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the Deflection yoke, neck assy, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the Neck assembly fixing screw and remove.
6. Loosen the Deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the Degaussing Coil holders.
8. Remove the Degaussing Coils.
9. Remove the CRT grounding strap and spring tentioners.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT.
[Take care not to handle the CRT by the neck.]

Removal of the Anode-Cap

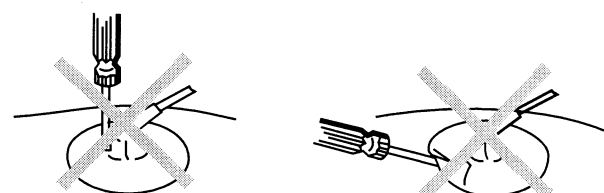
* REMOVING PROCEDURES.



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

How to handle the Anode-Cap

1. To prevent damaging the surface of the anode-cap do not use sharp materials.
2. Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
3. A metal fitting called a shatter hook terminal is fitted inside the rubber cap.
4. Do not turn the rubber foot over excessively, this may cause damage if the shatter hook sticks out.



SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast 80% [or remote control normal]

Brightness 50%

Carry out the adjustments in the following order :

- 3-1. Beam Landing.
- 3-2. Convergence.
- 3-3. Focus.
- 3-4. White Balance.

Note :

- Test equipment required.
1. Color bar/pattern generator.
 2. Degausser.
 3. Oscilloscope.
 4. Digital multimeter.

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

3-1. Beam Landing

1. Input an all white signal from the pattern generator. Set the Contrast and Brightness to normal.
2. Set the pattern generator raster signal to Red.
3. Move the deflection yoke forward and adjust with the purity control so that the Red is at the centre and the Blue and Green take up equally sized areas on each side of the screen. [See Fig.3-1 - 3-3].
4. Move the deflection yoke backwards and adjust so that the entire screen becomes Red. [See Fig.3-1]
5. Switch the raster signal to Blue, then to Green and verify the condition.
6. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to correct it. [See Fig.3-4]

Fig. 3-2.

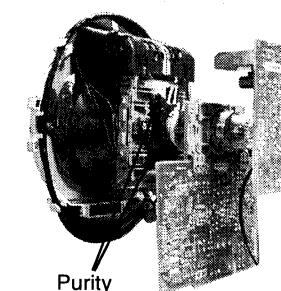


Fig. 3-3.

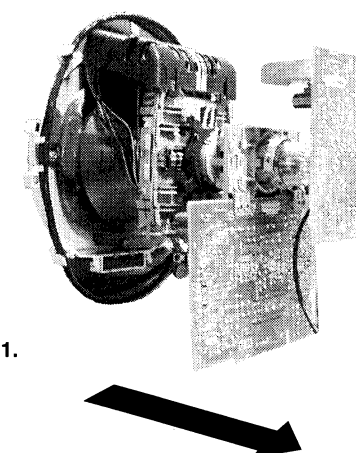
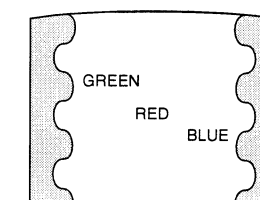


Fig. 3-1.

Caution :

High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

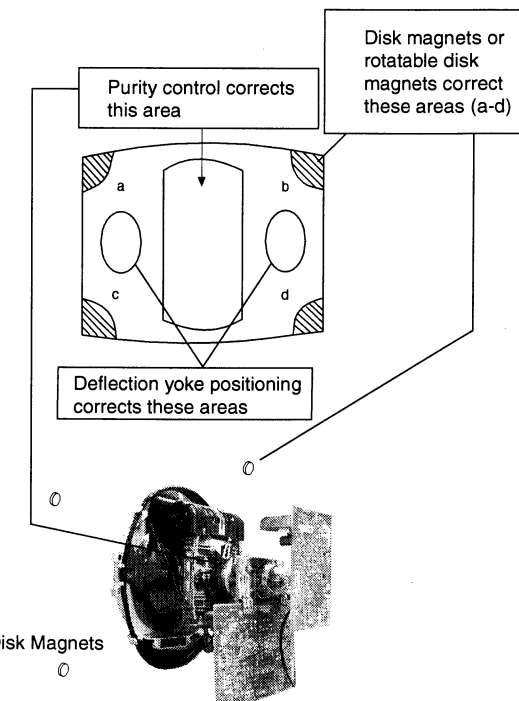


Fig.3-4

3-2. Convergence

Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the Brightness setting.
- Input a dot pattern from the pattern generator.

Horizontal and Vertical Static Convergence

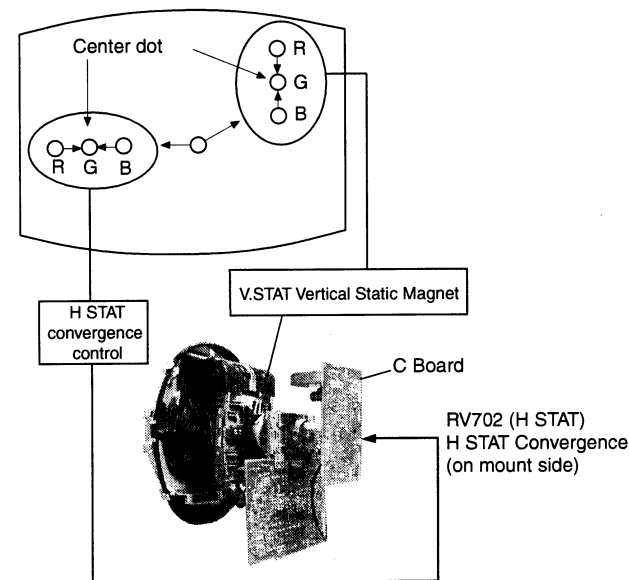
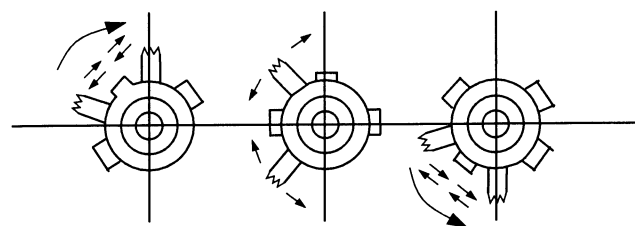
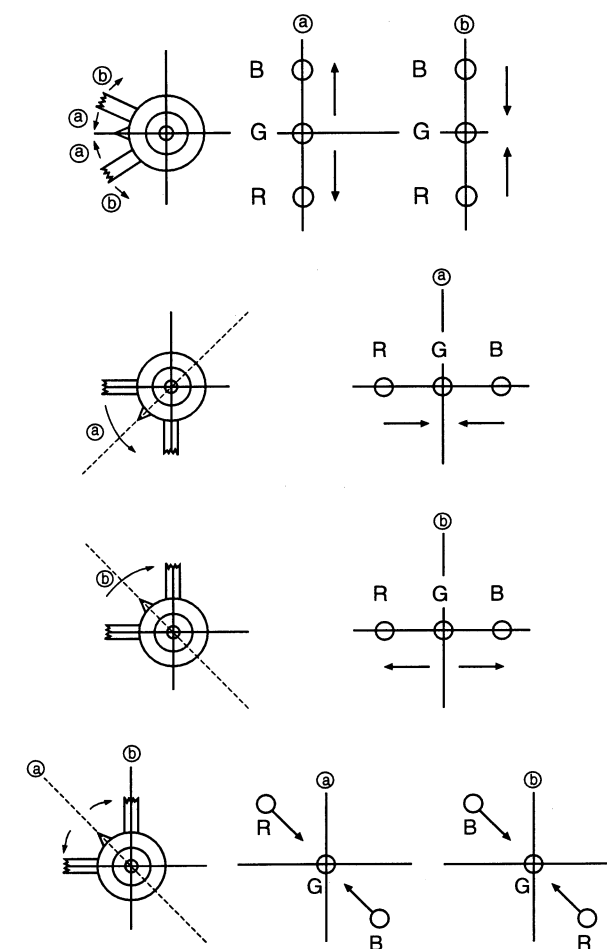


Fig.3-5

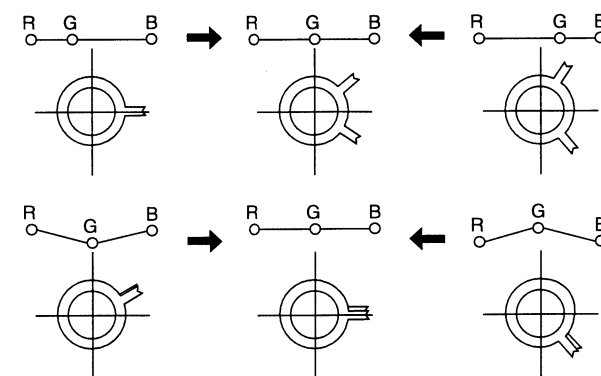
1. [Moving horizontally], adjust the H.STAT control so that the Red, Green and Blue points are on top of each other at the centre of the screen.
 2. [Moving vertically], adjust the V.STAT magnet so that the Red, Green and Blue points are on top of each other at the centre of the screen.
 3. If the H.STAT variable resistor is unable to bring the Red, Green and Blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner indicated below.
[In this case, the H.STAT variable resistor and the V.STAT magnet influence each other].
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue points move as indicated below.



Operation of the BMC (Hexapole) magnet.



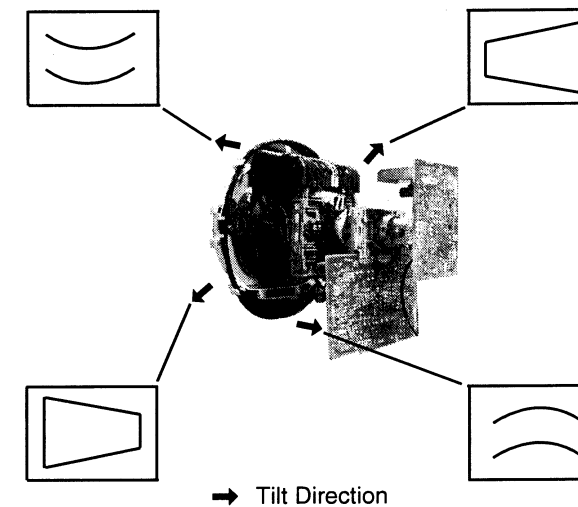
The movement of the magnets interact with each other and so the respective dot position should be monitored while carrying out this adjustment.
Use the H.STAT VR to adjust the Red, Green and Blue dots so that they coincide at the centre of the screen (by moving the dots in the horizontal direction).

Geometry Adjustment.

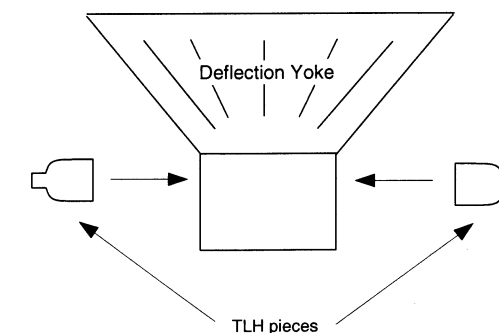
Preparation:

Before starting this adjustment, adjust the horizontal and vertical static convergence.

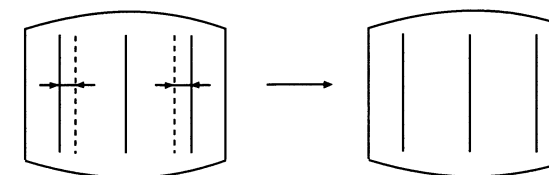
1. Remove the deflection yoke spacer.
2. Tilt the deflection yoke as indicated in the figure below and optimise the geometry.
Tilting the DY Up and Down will balance the upper and lower pin adjustment.
Tilting the DY Left and Right will balance the H-Trap adjustment.
3. Re-install the deflection yoke spacer.



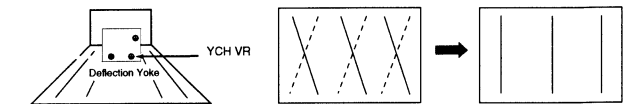
HTIL Adjustment



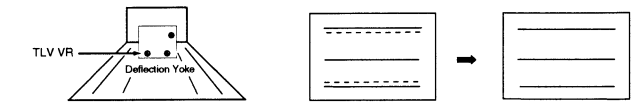
HTIL correction can be performed by adding a TLH correction assembly to the Deflection yoke.



YCH Adjustment

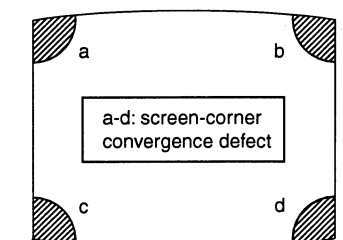


TLV Adjustment

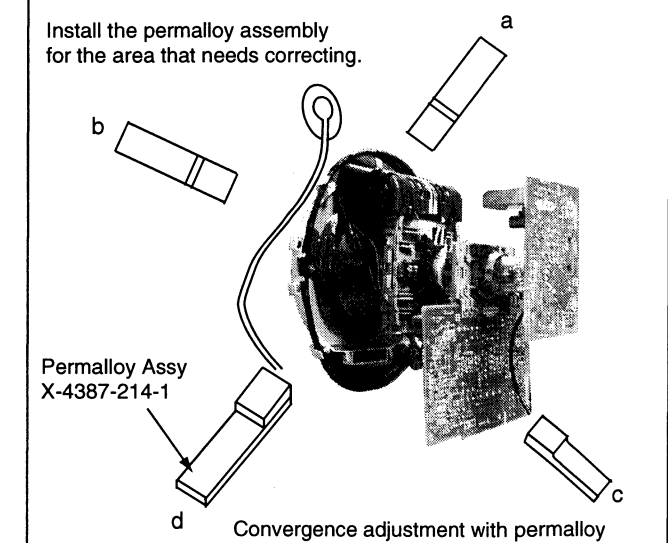


Screen Corner Convergence

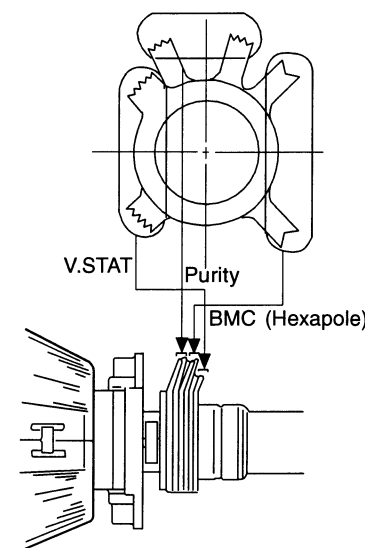
If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloy magnets.



Install the permalloy assembly for the area that needs correcting.

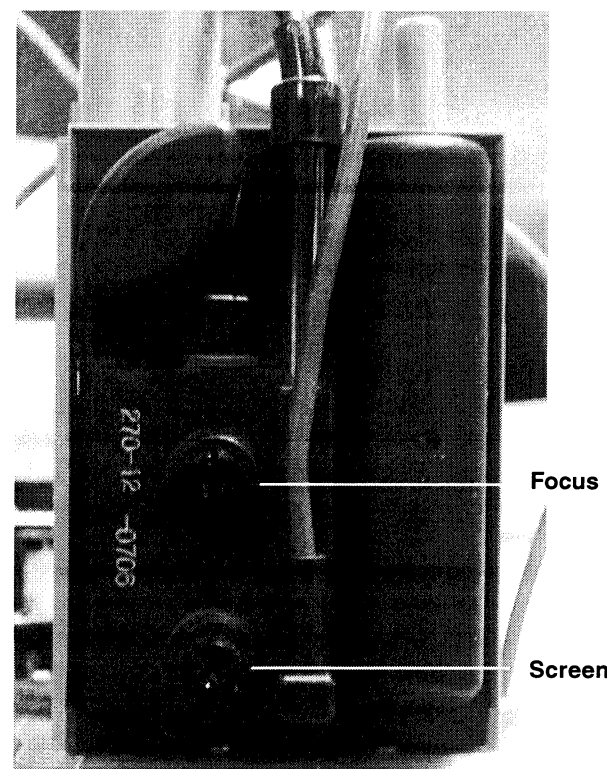


Layout of each control



3-3. Focus Adjustment

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen. Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-4. Screen (G2), White Balance

[Adjustment in the service mode using the remote commander]

G2 adjustment

1. Input a dot signal from the pattern generator.
2. Enter the 'Service Mode' by pressing 'TEST', 'TEST' and '38' (TT-38) on the remote commander, to set up the G2 service adjustment mode.
3. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point where the OSD menu indication shows "OK".

White balance adjustment for TV mode

1. Input an all-white signal from the pattern generator.
2. Enter into the 'Service Mode' by pressing 'TEST', 'TEST' and 'MENU' on the Service Commander.
3. Select 'Service' from the on screen menu display and press the right arrow button on the remote commander.
4. The 'Service' menu will appear on the screen. [See Page 20]
5. Set the 'Contrast' to MAX.
6. Set the 'R-Drive' to 25.
7. Adjust the 'G-Drive' and the 'B-Drive' so that the white balance becomes optimum.
8. Press the 'OK' button to write the data for each item.
9. Set the 'Contrast' to MIN.
10. Adjust the 'G-Cutoff', and the 'R-Cutoff' with the left and right buttons on the remote commander so that the white balance becomes optimum.
11. Press the 'OK' button to write the data for each item.

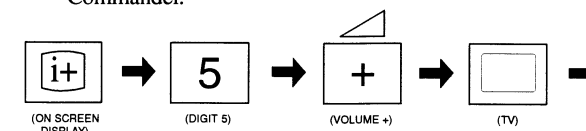
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. Electrical Adjustments

Service adjustments to this model can be performed using the supplied remote Commander RM-932.

How to enter into the Service Mode

1. Turn on the main power switch and enter into the stand-by mode.
2. Press the following sequence of buttons on the Remote Commander.



'TT—' will appear in the upper right corner of the screen. Other status information will also be displayed.

3. Press 'MENU' on the remote commander to obtain the following menu on the screen.

```

Geometry
Service
Design
Status
Sound
IF adjust
Error Menu

FE-2 Stereo v3.44
Factory data 00h FFh
MSP Device : MSP3410G
    
```

4. Move to the corresponding adjustment item using the up or down arrow buttons on the Remote Commander.
5. Press the right arrow button to enter into the required menu item.
6. Press the 'Menu' button on the Remote Commander to quit the Service Mode when all adjustments have been completed.

Note :

- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

ERROR MENU

E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSUNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0

WORKING TIME

HOURS	2
MINUTES	11

SERVICE

Offset-R	(0, 63)	Adj
Offset-G	(0, 63)	Adj
R-Drive	(0, 63)	31
G-Drive	(0, 63)	Adj
B-Drive	(0, 63)	Adj
Peak-Freq	(0, 3)	0
Luma-Delay	(0, 15)	8
SC0	(0, 3)	3
White-Peak	(0, 15)	15
Subcont	(0, 15)	8
Subright	(0, 63)	30
Subcol	(0, 63)	Adj
Subsharp	(0, 63)	25
Cutoff Br.	(0, 63)	31
Br OSD	(0, 15)	10
Br TXT	(0, 15)	7

GEOMETRY

V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	10
Right-HBlk	(0, 15)	7
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	40
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	27
Magenta	(0, 63)	31

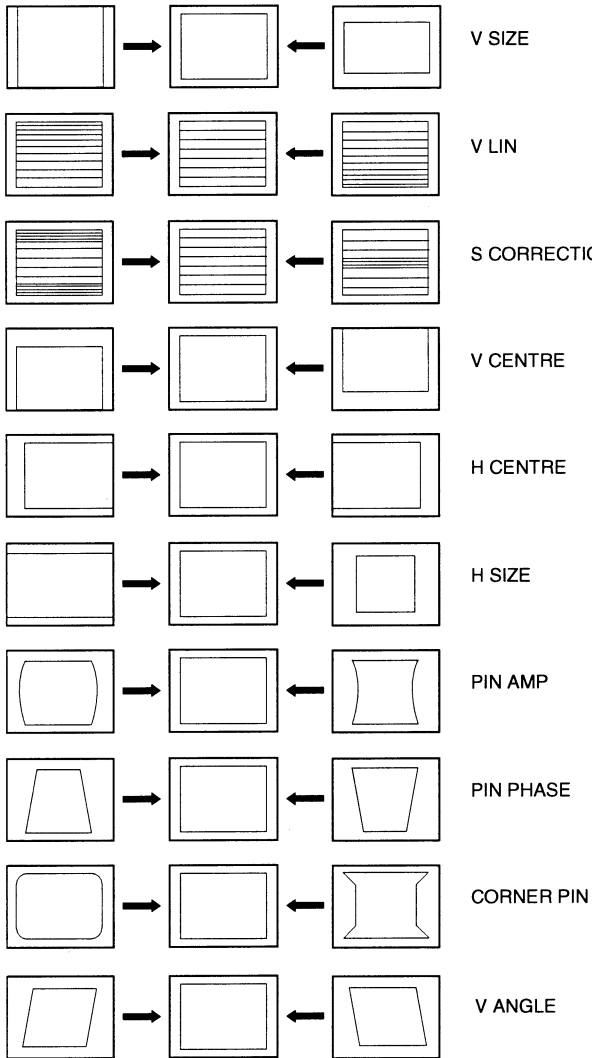
IF ADJUST

AGC Adjust	(-16, +15)	+0
Automute		1
Audio Gain		0
L Gating		0

Deflection System Adjustment

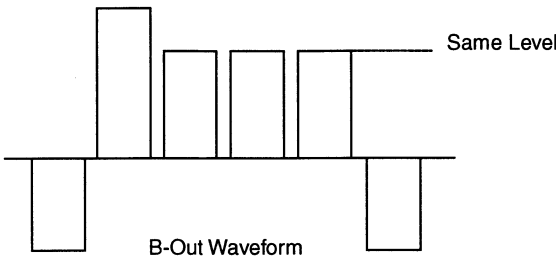
1. Enter into the 'Geometry' service menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY		
V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	10
Right-HBlk	(0, 15)	7
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	40
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	27
Magenta	(0, 63)	31



Sub Colour Adjustment

1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 5 of CN3003 [A Board].
3. Enter into the 'Service' service menu.
4. Adjust the 'Sub Colour' data so that the Cyan, Magenta and Blue colour bars are of equal levels as indicated below.



Sub Brightness Adjustment

1. Input a Monoscope pattern.
2. Press 'TEST' 'TEST' 13 on the Remote Commander.
3. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

Sub Contrast Adjustment

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect an digital voltmeter to Pin 10 of J7001 [C Board].
3. Adjust the Sub-Contrast ['TT11'] to obtain a voltage of 105 +/- 5V.

4-2. TEST MODE 1:

Test Mode 1 is available by pressing the 'TEST' button once, OSD 'T' appears. The functions described below are available by selecting the indicated keys. The 'T' is released automatically after each command is executed.

KEY	T-MODE FUNCTION
volume +	volume maximum
volume -	Picture minimum
picture +	Picture maximum
picture -	Picture minimum
colour up	colour maximum
colour down	colour minimum
brightness - bright	brightness maximum
brightness - dark	brightness minimum
hue - purplish	hue - purplish
hue - greenish	hue - greenish
sharpness - sharp	sharpness maximum
sharpness - soft	sharpness minimum
balance left	balance full left
balance right	balance full right
treble up	treble maximum
treble down	treble minimum
bass up	bass maximum
bass down	bass minimum

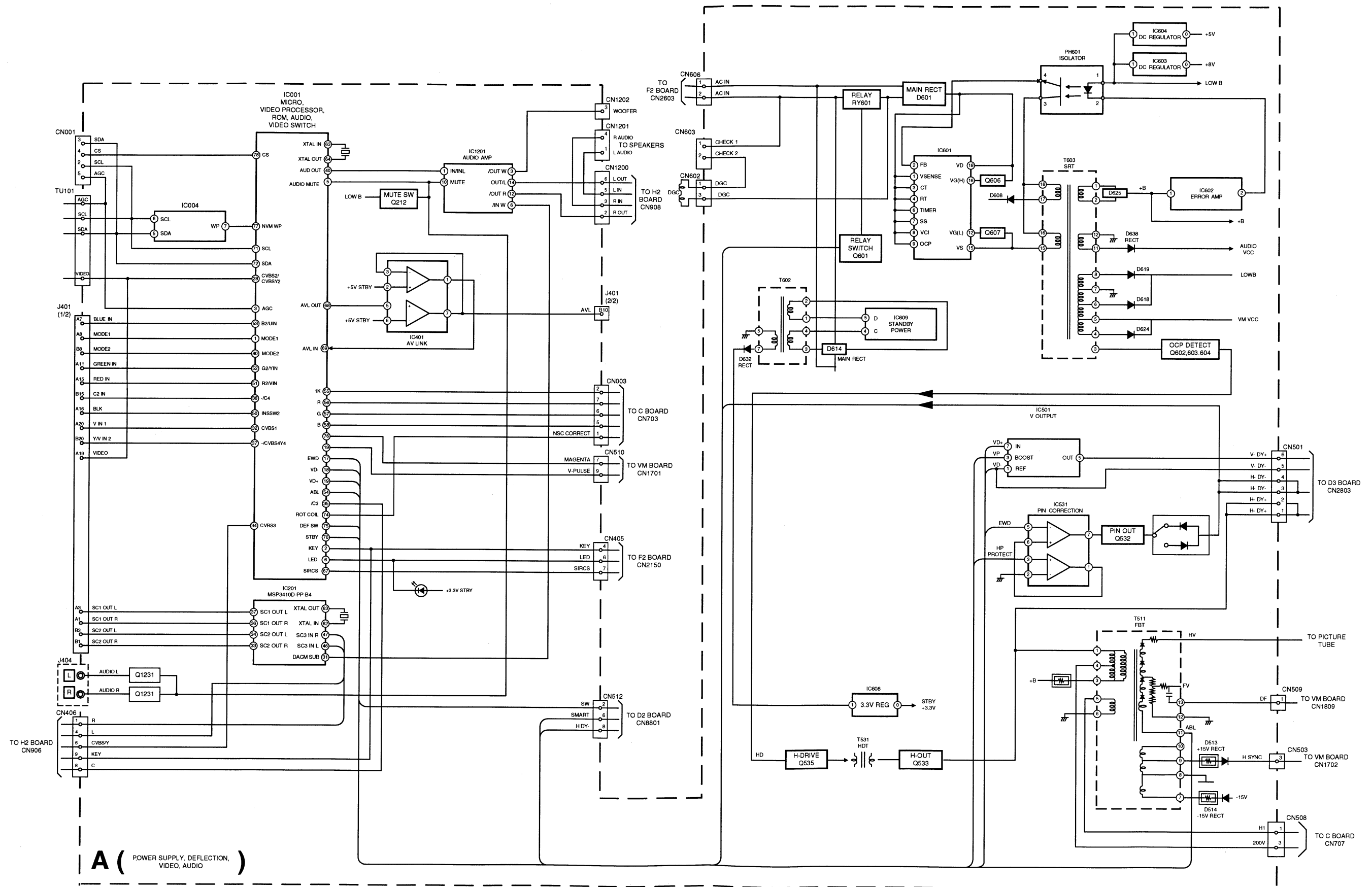
4-3. TEST MODE 2:

Test Mode 2 is available in Service Mode, OSD 'TT' appears. The functions described below are available by selecting the two numbers. To release 'Test mode 2', press 00 or switch the TV set into Stand-by mode.

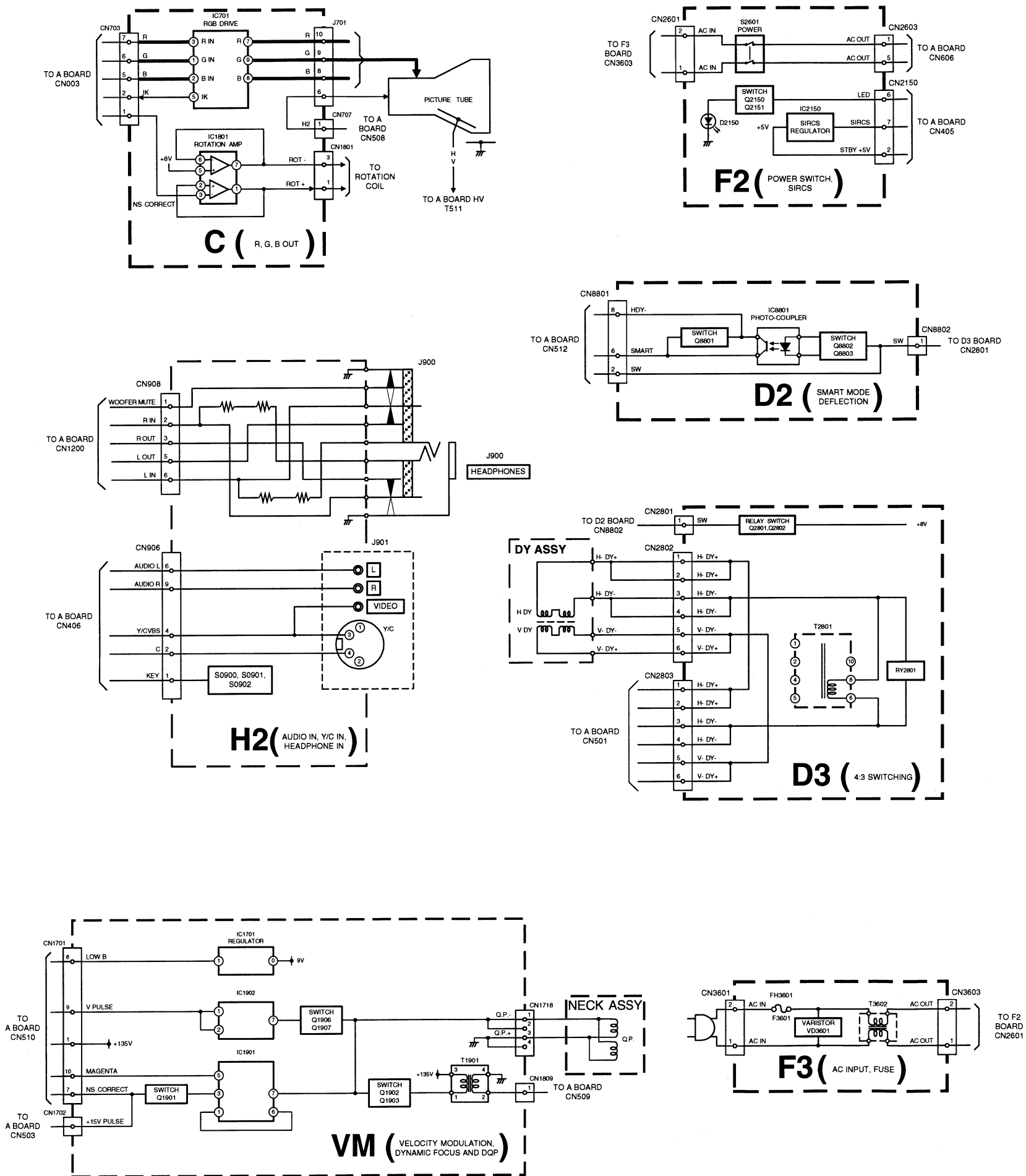
00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 35%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
11	Sub picture adjustment
12	Sub colour adjustment
13	Sub Brightness adjustment
14	Text H Position adjustment
15	Rotation Coil Test
16	Picture level 50%
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
23	Destination ADEKR
24	Destination U
25	Destination ADEKR
26	Destination BL

27	Destination ADEKR
28	Destination ADEKR
31	Auto Shutoff Enable/Disable
33	Rotation ON/OFF
35	Toggle Wide Mode
36	Velocity Modulation (VM) OFF/ON test
38	G2 adjustment
39	AVC release timing delay enable/disable
41	Re-initialise NVM
43	Select Dual A sound
44	Select Dual B sound
45	Select Mono sound
46	Select Stereo sound
48	Set NVM as non virgin
49	Set NVM as virgin
51	Virtual Dolby on/off
52	Subwoofer / MPB (Bass enhancement) Enable
53	FM over-modulation enable/disable
54	Dot structure C/M (chroma trap)
55	Tuner selection (SONY/ALPS)
56	BBE enable/disable
57	BBE menu line enable/disable
58	Dolby-BBE combination (BBE is Off when Dolby is On, and vice versa)
59	Line 318 disappear problem C/M enable/disable
61	Auto AGC Adjustment
62	AM from baseband enable/disable
63	Enable/Disable YC3 connector
64	Enable/Disable RGB priority
65	RGB auto-detect enable/disable
66	On timer enable/disable
67	Manual AGC Adjustment
68	Enable/Disable X26 countermeasure (N problem)
69	Enable/Disable ACI feature. -> deleted
71	Force PAL video
72	Un-force PAL (restore normal video condition)
73	Enable Zweiton D/K2 system (6.5/6.74)
74	Enable Zweiton D/K3 system (6.5/5.74)
75	MSP error detection method
78	Balance full left
79	Balance full right
87	Local keys test
89	Enable/Disable watchdog
91	Set 14:9 zoom mode
92	Set SMART zoom mode
93	Set 16:9 zoom mode
94	Set ZOOM mode
95	Set 4:3 zoom mode
99	Display Error and Working Time menu

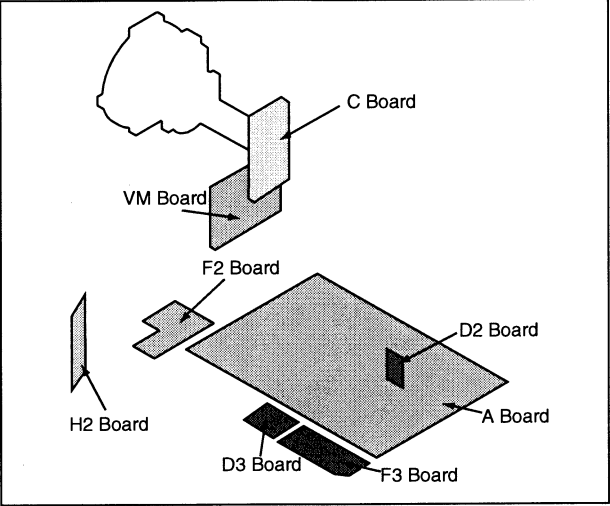
5-1. BLOCK DIAGRAMS (1)



5-1. BLOCK DIAGRAMS (2)



5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

- Note :**
- All capacitors are in μF unless otherwise noted.
 - pF : μF 50WV or less are not indicated except for electrolytic types.
 - Indication of resistance, which does not have one for rating electrical power, is as follows.
- Pitch : 5mm
Electrical power rating : 1/4W
- Chip resistors are 1/10W
 - All resistors are in ohms.
 $k = 1000$ ohms, $M = 1000,000$ ohms
- : nonflammable resistor.
 - : fusible resistor.
 - : internal component.
 - : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - All voltages are in Volts.
 - Readings are taken with a 10Mohm digital mutimeter.
 - Readings are taken with a color bar input signal.
 - Voltage variations may be noted due to normal production tolerances.
- : B + bus.
 - : B - bus.
 - : RF signal path.
 - : earth - ground.
 - : earth - chassis.

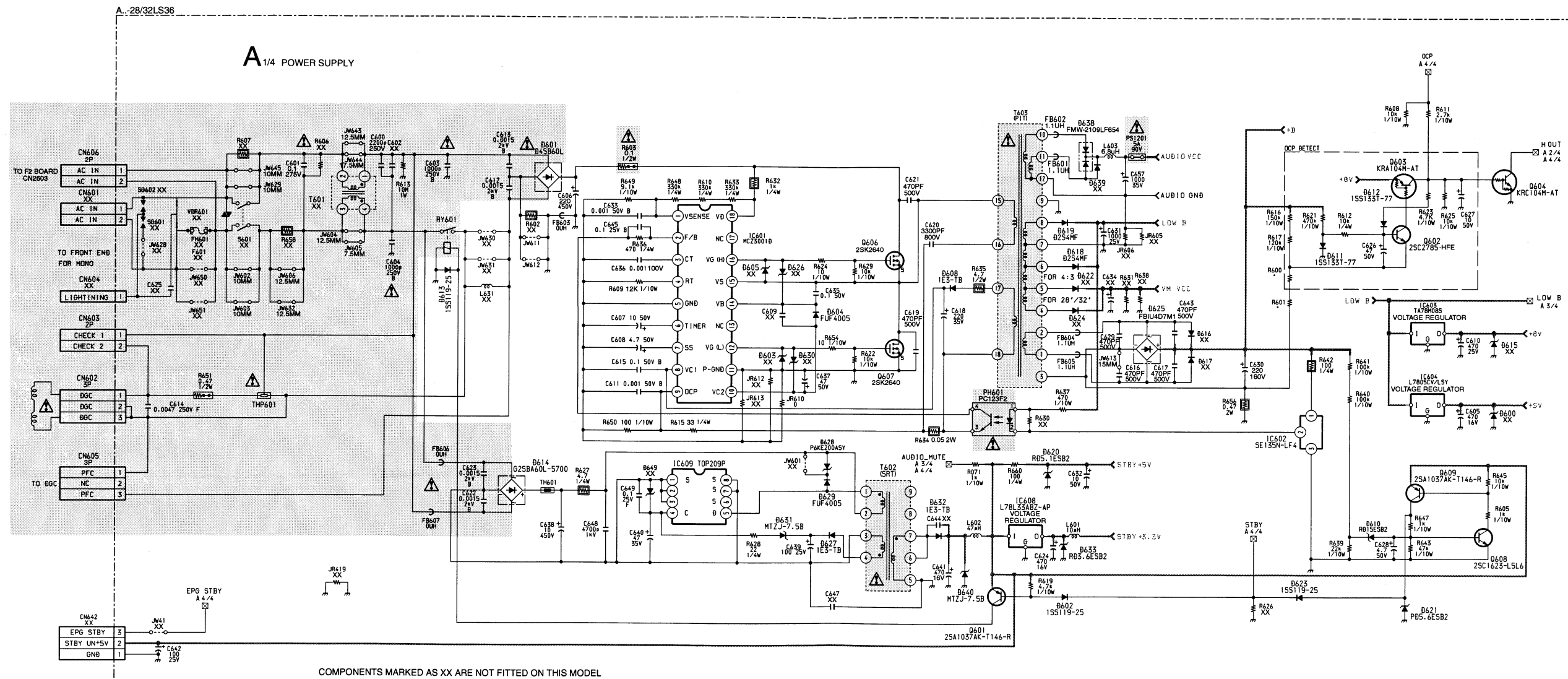
Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
		: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

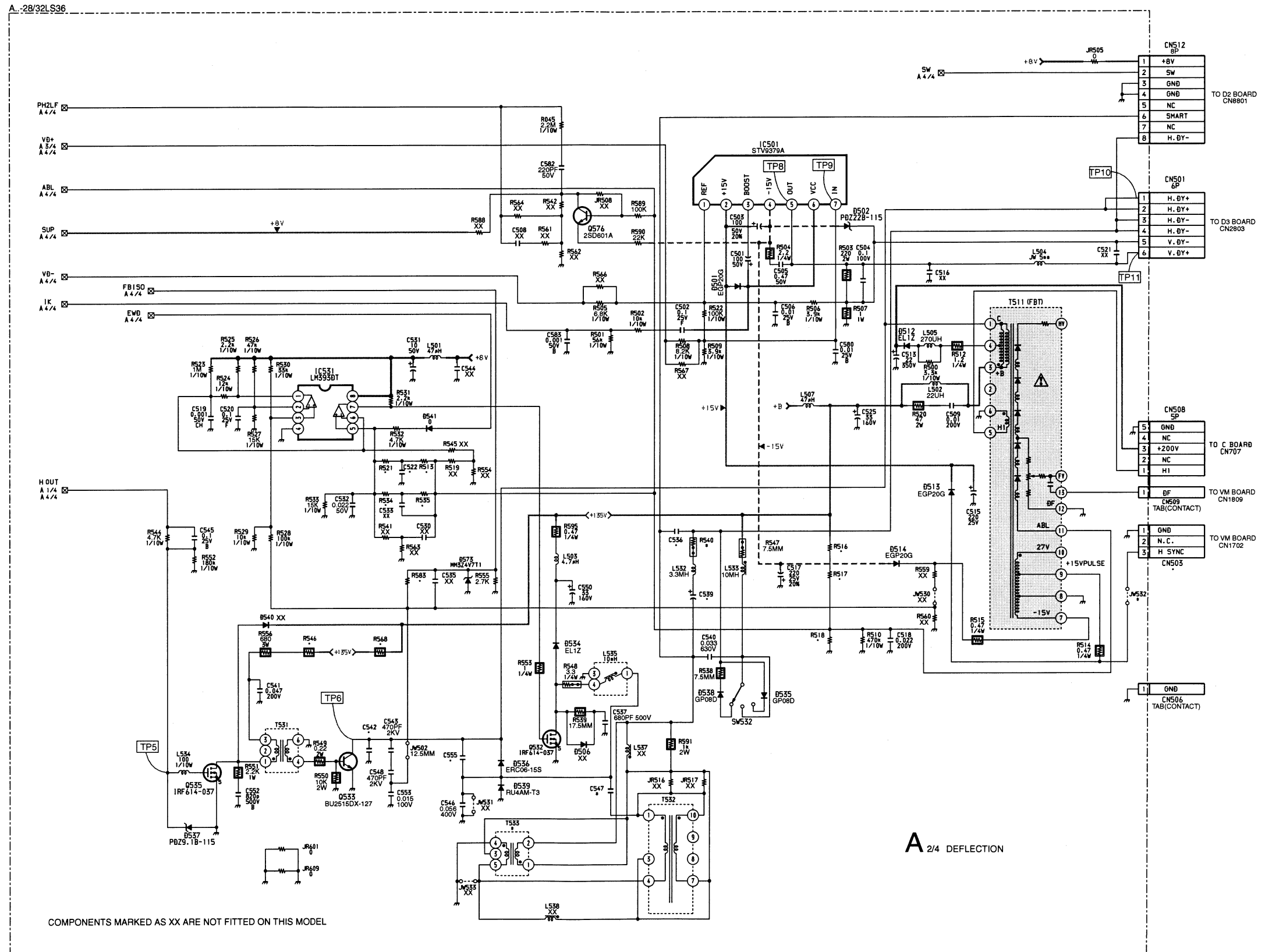
Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

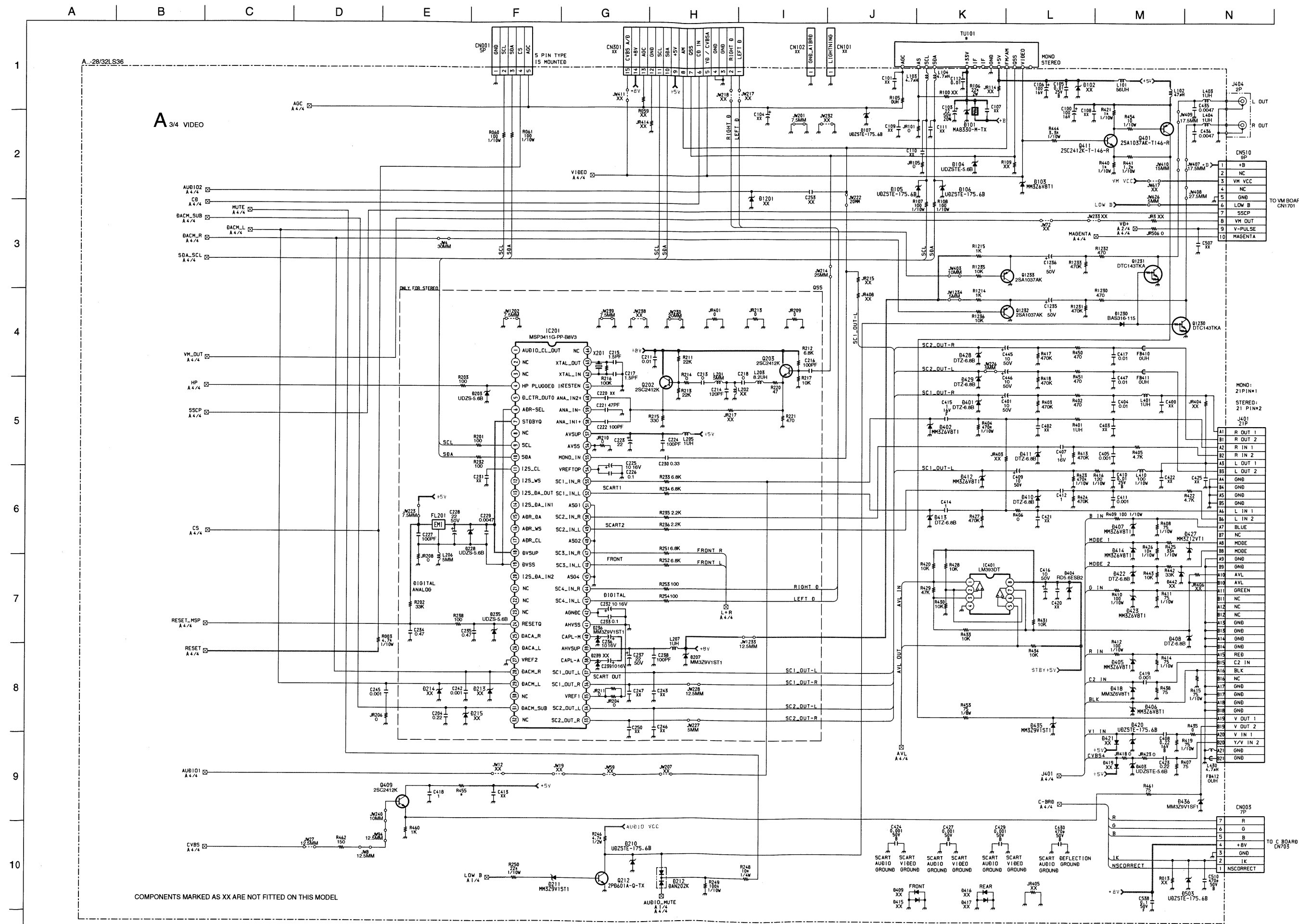
Note : Les composants identifiés par une trame et par une marque Δ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

A B C D E F G H I J K L M N



A B C D E F G H I J K L M N

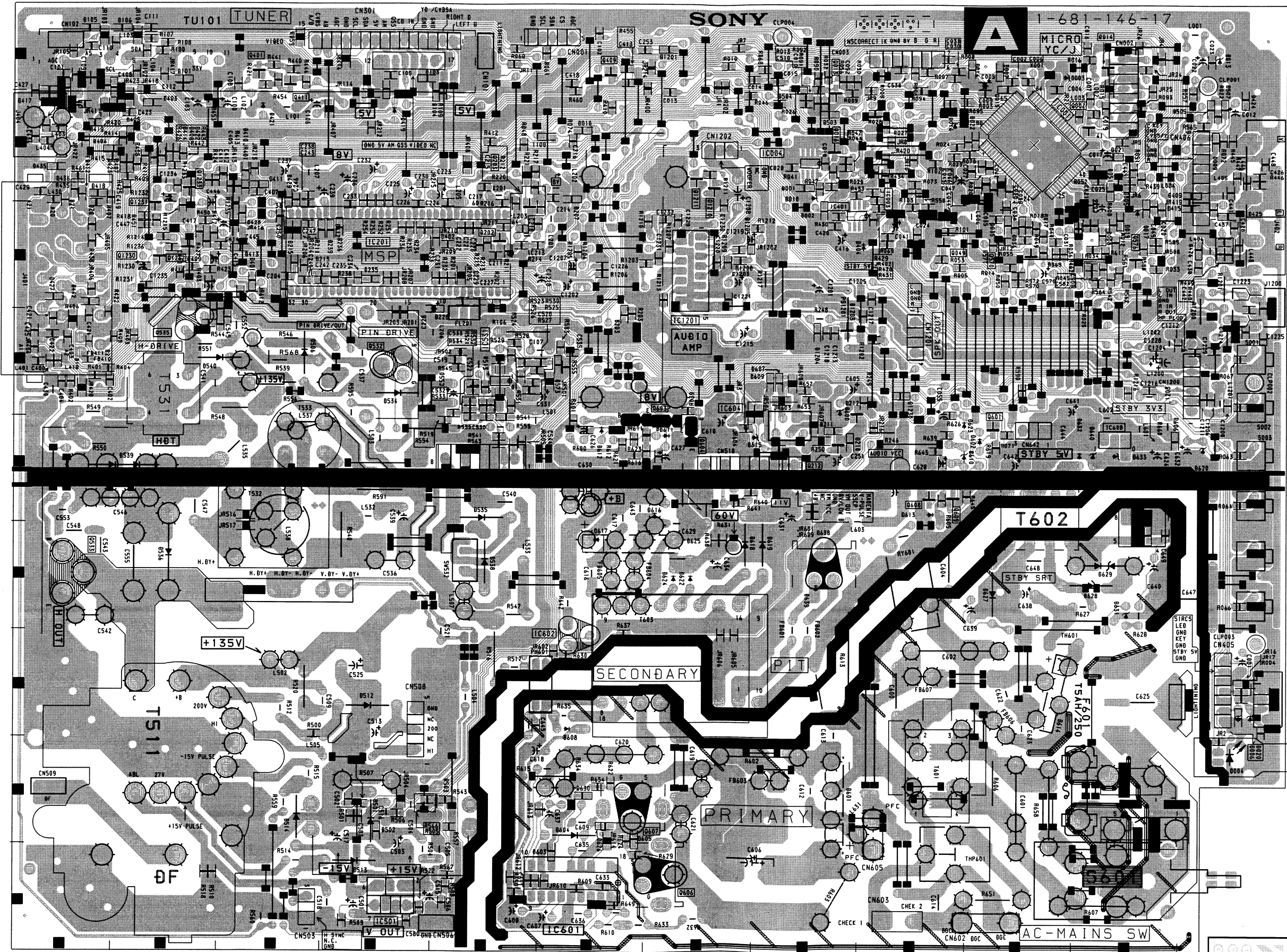






A B C D E F G H I J K L M N

1
2
3
4
5
6
7
8
9
10
11



~ A Board Semiconductor Location Table ~

DIODE		D421	C - 2	D631	L - 7
D001	I - 2	D422	C - 2	D632	K - 5
D002	I - 3	D423	C - 2	D633	L - 5
D003	K - 2	D424	M - 2	D638	I - 6
D004	M - 4	D427	A - 4	D640	L - 5
D006	M - 8	D428	C - 3	TRANSISTOR	
D007	K - 1	D429	D - 3	Q013	I - 3
D008	L - 3	D435	A - 2	Q014	L - 1
D010	G - 2	D436	A - 2	Q049	J - 3
D011	F - 2	D501	D - 9	Q202	E - 3
D013	M - 1	D502	D - 9	Q203	F - 2
D016	J - 2	D503	I - 2	Q212	I - 5
D018	I - 3	D504	I - 2	Q401	C - 1
D020	M - 8	D505	M - 2	Q409	G - 1
D021	L - 2	D506	D - 4	Q411	D - 2
D022	J - 2	D507	M - 2	Q532	D - 4
D035	K - 3	D512	D - 8	Q533	A - 6
D036	K - 3	D513	D - 9	Q535	B - 4
D051	L - 3	D514	C - 9	Q601	K - 5
D101	B - 1	D534	E - 5	Q602	G - 5
D103	E - 1	D535	E - 6	Q603	G - 5
D104	E - 2	D536	B - 6	Q604	H - 5
D105	A - 1	D537	C - 4	Q606	G - 10
D106	B - 1	D538	E - 6	Q607	G - 9
D107	B - 2	D539	B - 5	Q608	J - 6
D207	F - 3	D541	F - 5	Q609	J - 6
D210	I - 5	D573	F - 5	Q1210	H - 3
D211	I - 5	D601	I - 9	Q1211	H - 3
D212	I - 5	D602	J - 5	Q1230	B - 3
D228	E - 4	D604	F - 9	Q1231	B - 3
D236	D - 3	D608	F - 8	Q1232	B - 3
D239	D - 3	D610	J - 5	Q1233	C - 2
D402	E - 3	D611	G - 5	IC'S	
D403	B - 2	D612	G - 5	IC001	K - 2
D404	I - 3	D613	J - 6	IC002	M - 8
D405	B - 2	D614	K - 8	IC004	H - 2
D406	B - 2	D615	H - 5	IC401	I - 3
D407	B - 2	D618	H - 6	IC501	E - 10
D408	B - 2	D619	H - 6	IC531	F - 4
D410	C - 2	D620	M - 5	IC601	F - 10
D411	C - 3	D621	J - 5	IC602	F - 7
D412	D - 3	D622	H - 7	IC604	H - 5
D413	C - 3	D623	J - 5	IC608	L - 5
D414	B - 2	D625	H - 6	IC609	L - 6
D418	B - 3	D627	K - 7	IC1201	H - 4
D419	E - 2	D628	L - 7		
D420	B - 2	D629	L - 7		

NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shock during inspection or repair.

~ A Printed Wiring Board Conductor side ~

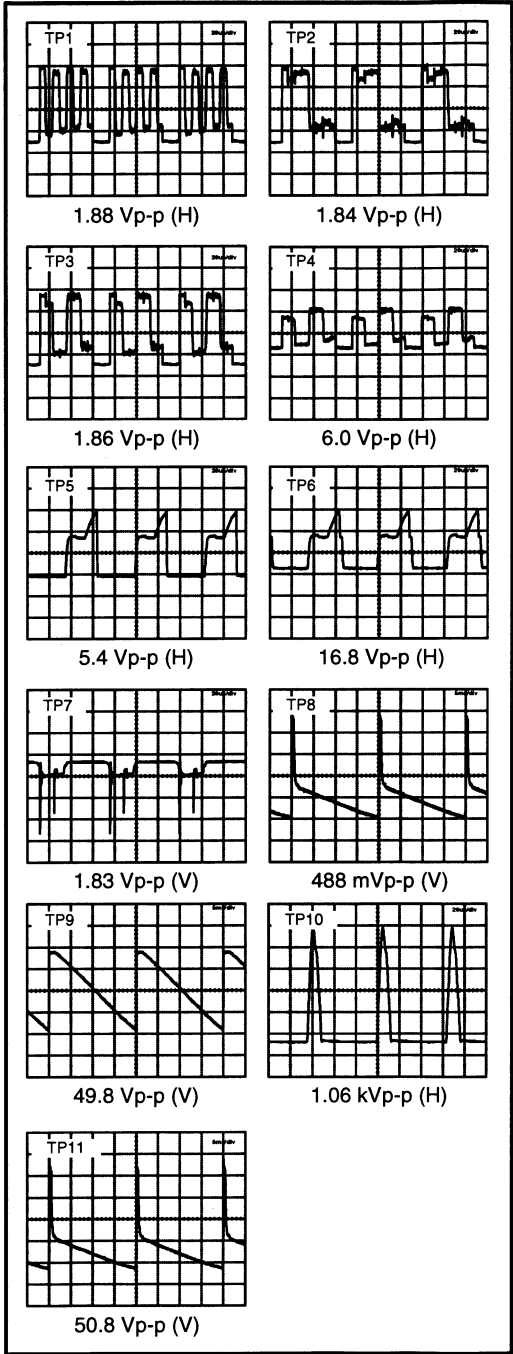
~ A Board IC Voltage Table~

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC001	1	0	IC001	67	4.8
	2	3.2		68	0.4
	3	2.9		69	0
	5	0		70	0
	6	2.0		71	0
	8	2.3		72	0
	9	8.0		73	7.1
	10	5.0		74	5.0
	12	0		75	8.1
	13	0		76	-3.5
	14	4.0		77	0
	16	1.4		78	3.2
	17	1.5		79	3.2
	18	0		80	0
	19	0	IC501	1	0.3
	20	3.8		3	-12.6
	21	3.8		5	0.2
	22	5.0		6	13.9
	26	0		7	0.3
	28	3.5	IC531	1	1.4
	29	3.6		2	2.3
	30	1.9		3	1.8
	31	0.3		5	2.4
	32	3.6		6	1.6
	34	1.9	IC601	7	6.4
	35	1.4		1	-80.4
	36	3.9		2	-80.5
	38	1.8		3	-80.2
	40	3.3		4	-80.2
	42	3.3		5	-81.5
	43	1.4		6	-81.6
	45	0		7	-77.8
	46	0		9	-81.8
	47	3.6		10	-76
	48	2.8		11	-81.9
	49	2.3		12	-79.4
	50	0.2		14	16.5
	51	2.5		15	11
	52	2.5	IC1201	16	14.4
	53	2.5		18	86.4
	54	2.1		1	11
	55	5.2		3	4.9
	56	3.0		5	0
	57	3.1		6	0
	58	3.1		7	11.3
	59	3.2		9	0.3
	62	0		10	0
	63	0		12	0
	64	0		14	11.35
	65	0			

~ A Board Semiconductor Voltage Table ~

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q013	0	0.7	0	Q604	0	0	2.5
Q016	0	0	3.3	Q608	0	0	5.6
Q212	0	0.7	0	Q609	5.6	5.6	0
Q401	4.8	4.2	1.8				
Q411	1.1	1.7	4.2	Ref	(e)	(g)	(d)
Q601	5.6	4.8	5.3	Q606	10.9	14.5	86.7
Q602	14.2	5.1	8	Q607	-82.4	-79.9	10.9
Q603	8	8	0	Q535	0	2.5	95.2

~ A Board Waveforms ~



~ A Board Difference Table ~

Ref	28LS36B	28LS36E	28LS36U	32LS36B	32LS36E	32LS36U
C522	0.27UF	0.27UF	0.27UF	-	-	-
C536	0.82UF	0.82UF	0.82UF	1UF	1UF	1UF
C539	1UF	1UF	1UF	2.2UF	2.2UF	2.2UF
C542	330PF	330PF	330PF	0.001UF	0.001UF	0.001UF
C547	0.082UF	0.082UF	0.082UF	0.068UF	0.068UF	0.068UF
C555	22000PF	22000PF	22000PF	19000PF	19000PF	19000PF
C570	2.2UF	2.2UF	2.2UF	-	-	-
CN503	-	-	-	PLUG 3P	PLUG 3P	PLUG 3P
Q570	2SC2412K-T-146--R	2SC2412K-T-146--R	2SC2412K-T-146--R	-	-	-
R022	47K	47K	47K	39K	39K	39K
R455	SHORT 0	SHORT 0	SHORT 0	4.7UH	4.7UH	4.7UH
R513	220K	220K	220K	-	-	-
R516	56K	56K	56K	47K	47K	47K
R517	18K	18K	18K	22K	22K	22K
R518	2.7K	2.7K	2.7K	6.8K	6.8K	6.8K
R521	220K	220K	220K	-	-	-
R534	100K	100K	100K	390K	390K	390K
R535	120K	120K	120K	220K	220K	220K
R540	33	33	33	47	47	47
R546	820	820	820	1K	1K	1K
R568	680	680	680	820	820	820
R569	10K	10K	10K	-	-	-
R570	1K	1K	1K	-	-	-
R571	270	270	270	-	-	-
R572	390	390	390	-	-	-
R583	10K	10K	10K	15K	15K	15K
R600	390	390	390	120	120	120
R601	470	470	470	680	680	680
T533	1-433-980-12	1-433-980-12	1-433-980-12	1-429-306-11	1-429-306-11	1-429-306-11
TU101	1-693-555-14 FRONTEND (TUNER+IF)	1-693-556-14 FRONTEND (TUNER+IF)	1-693-557-14 FRONTEND (TUNER+IF)	1-693-555-14 FRONTEND (TUNER+IF)	1-693-556-14 FRONTEND (TUNER+IF)	1-693-557-14 FRONTEND (TUNER+IF)

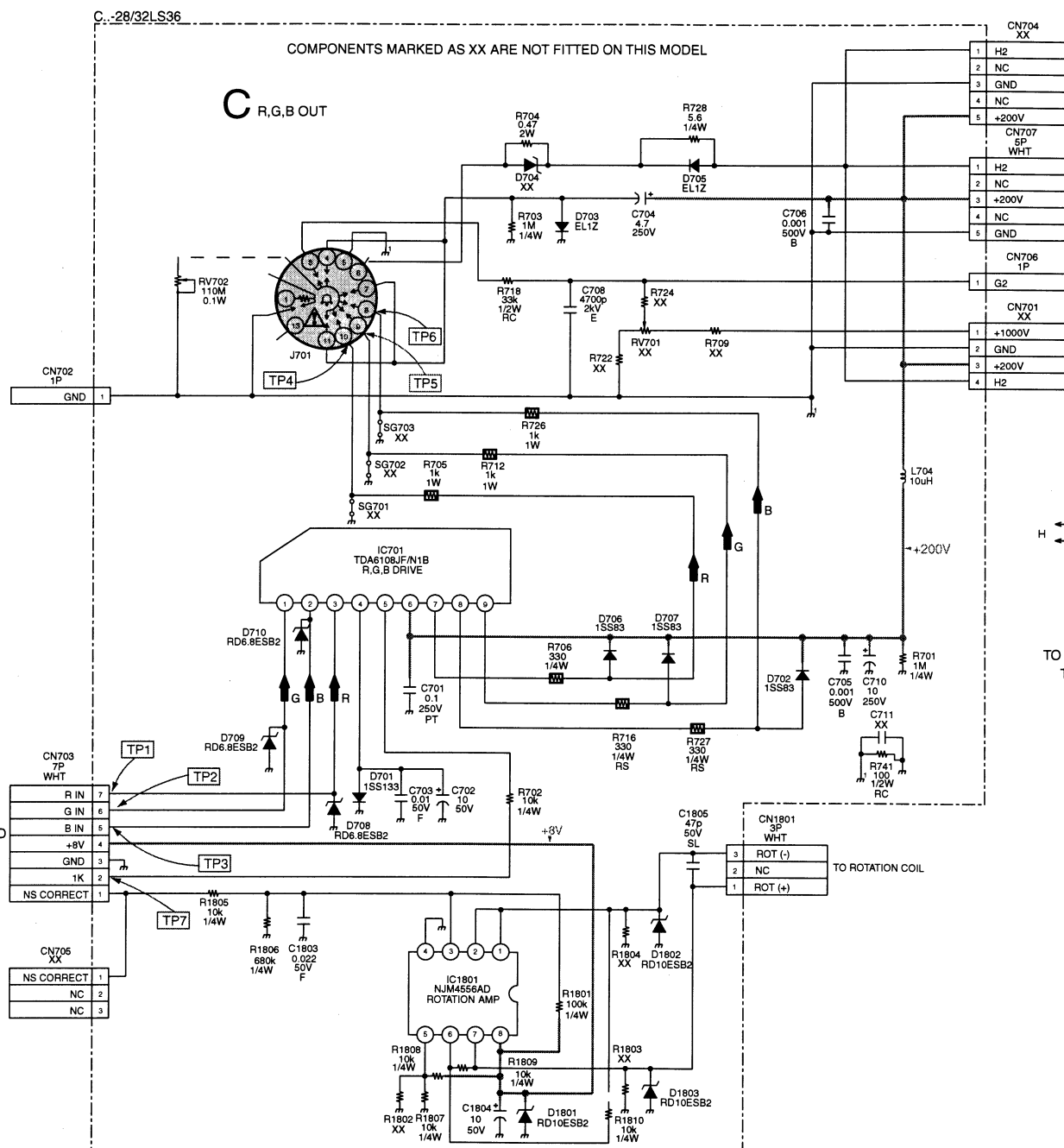
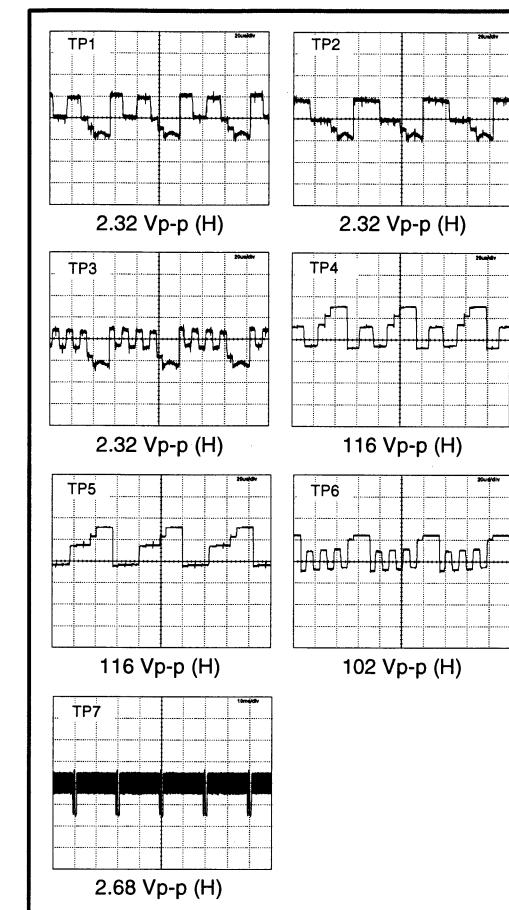
~ C Board Semiconductor Voltages ~

Ref	Anode	Cathode	Ref	Anode	Cathode	Ref	Anode	Cathode
D701	0.7	0	D706	131.8	199.4	D710	0	2.6
D702	154.4	199.4	D707	136.7	199.4	D1801	0	8.0
D703	0	0	D708	0	3.1	D1802	0	3.8
D705	0	0.7	D709	0	3.0	D1803	0	4.2

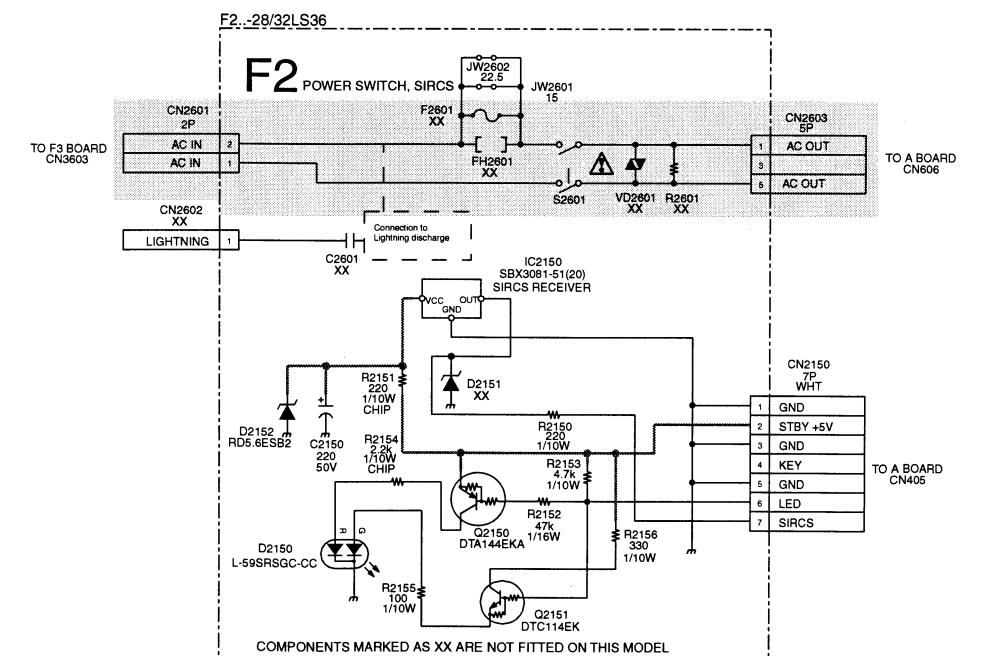
~ C Board IC Voltages ~

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC701	1	3.0	IC1801	1	3.8
	2	2.6		2	3.8
	3	3.1		3	3.8
	4	0.7		4	0
	5	6.3		5	4.0
	6	199		6	4.0
	7	133.5		7	4.2
	8	154.4		8	8.0
	9	136.2			

~ C Board Waveforms ~

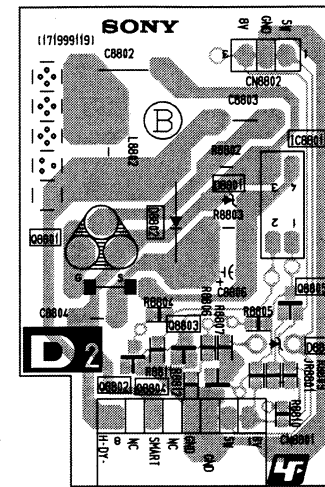


~ C Board Schematic Diagram [R-G-B Out] ~

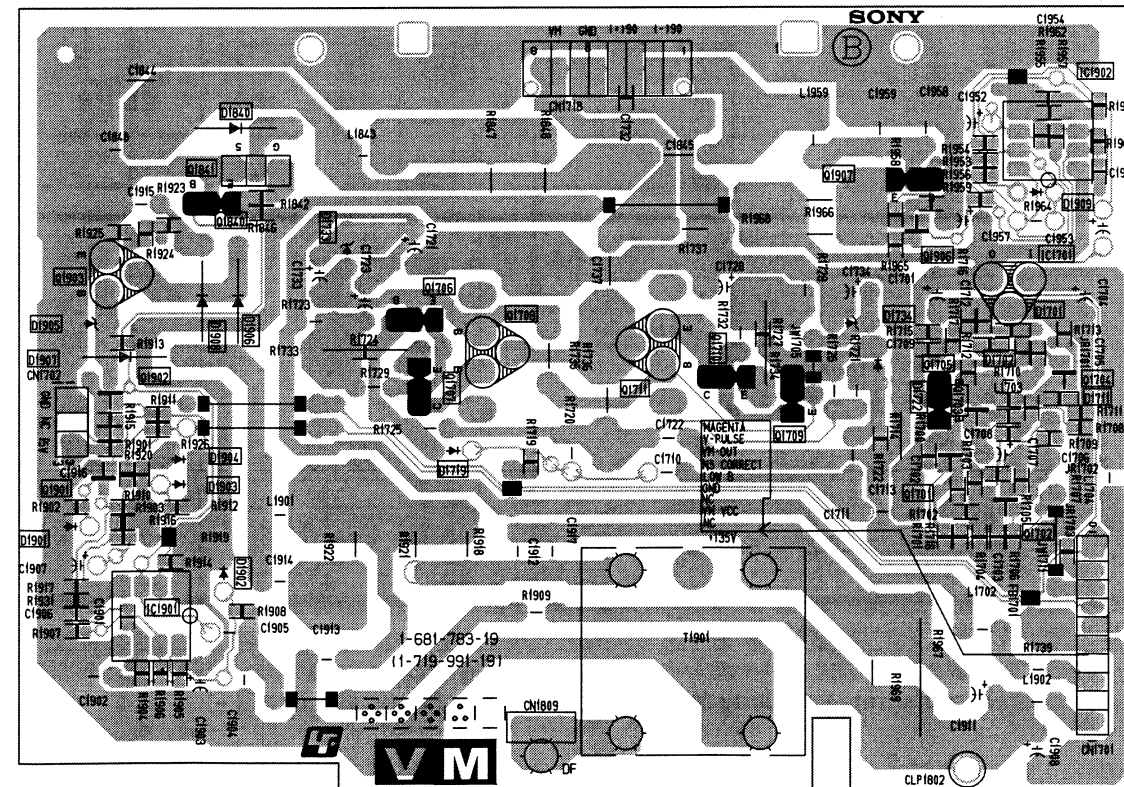


~ F2 Board Schematic Diagram [Power Switch, Sircs] ~

~ D2 Printed Wiring Board Conductor side ~

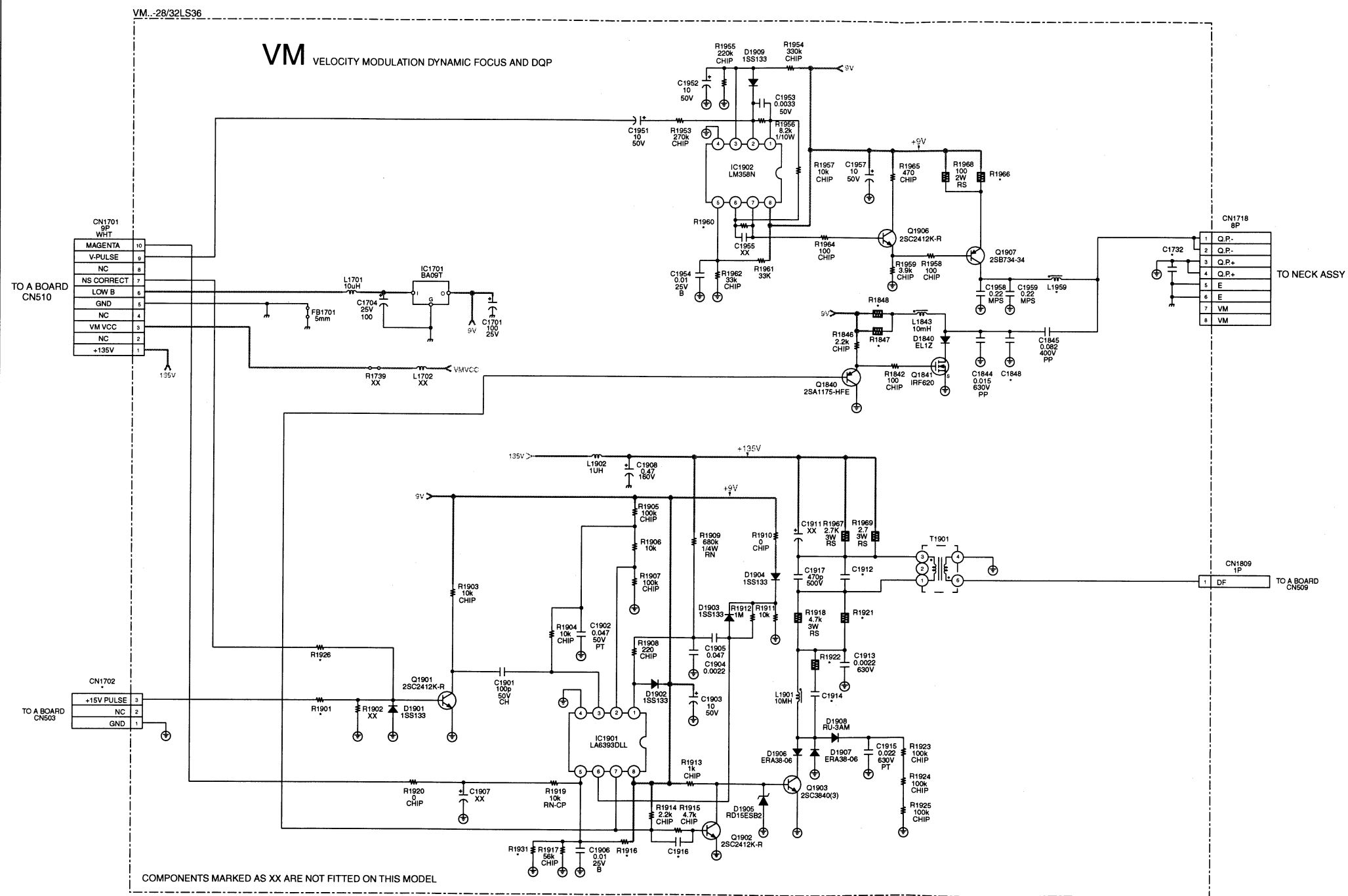


~ VM Printed Wiring Board Conductor side ~



A B C D E F G H I J K L M N

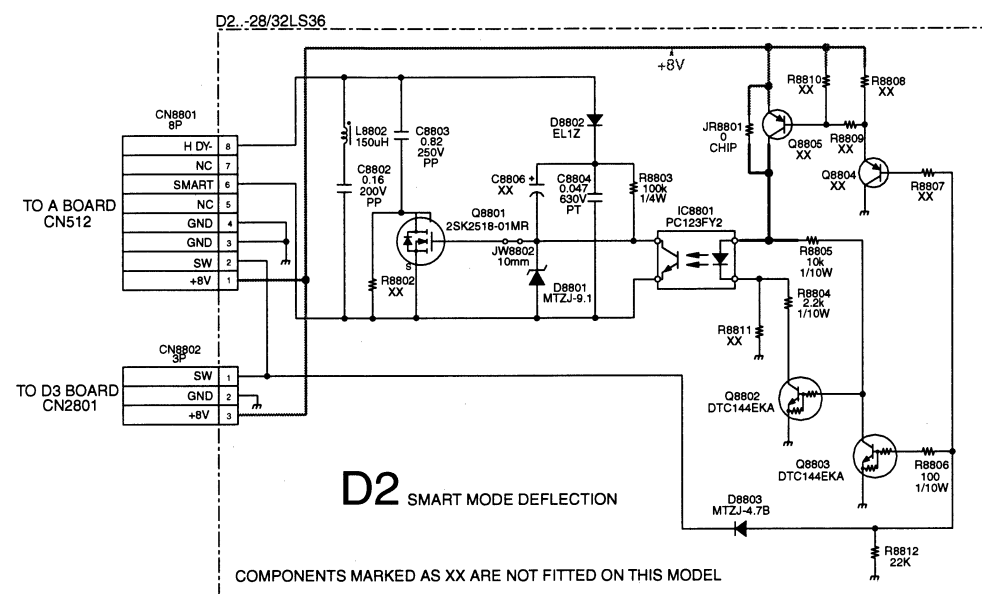
1
2
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10
11



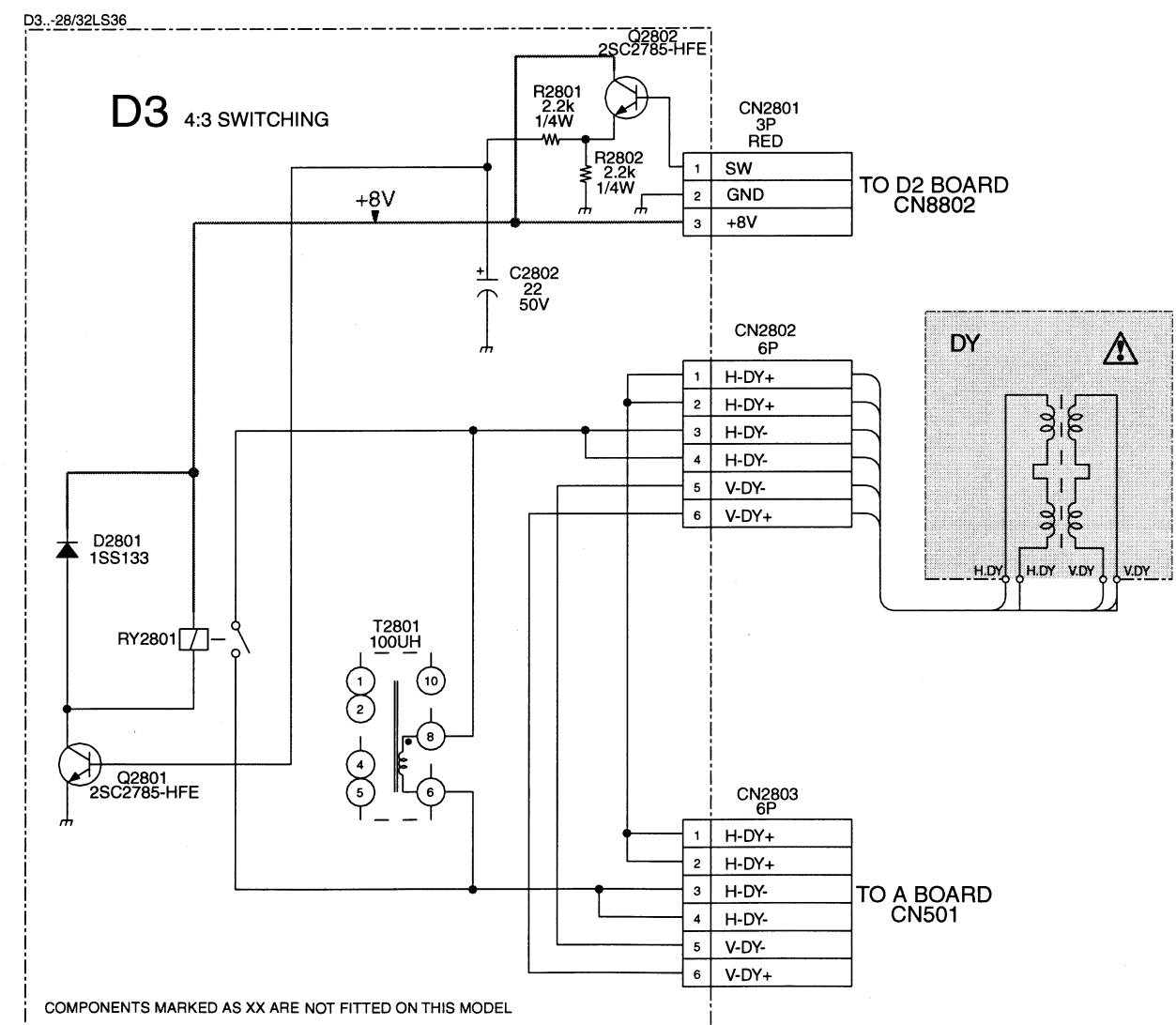
~ VM Board DifferenceTable ~

Ref	28LS36B	28LS36E	28LS36U	32LS36B	32LS36E	32LS36U
C1803	-	-	-	0.022UF	0.022UF	0.022UF
C1804	-	-	-	10UF	10UF	10UF
C1805	-	-	-	47PF	47PF	47PF
C1912	100PF	100PF	100PF	-	-	-
C1913	0.0022UF	0.0022UF	0.0022UF	0.0015UF	0.0015UF	0.0015UF
C1914	330PF	330PF	330PF	150PF	150PF	150PF
CN1801	-	-	-	3P	3P	3P
D1801	-	-	-	MTZJ-T-77-10	MTZJ-T-77-10	MTZJ-T-77-10
D1802	-	-	-	MTZJ-T-77-10	MTZJ-T-77-10	MTZJ-T-77-10
D1803	-	-	-	MTZJ-T-77-10	MTZJ-T-77-10	MTZJ-T-77-10
L1901	10MH	10MH	10MH	15MH	15MH	15MH
L1959	22MH	22MH	22MH	10MH	10MH	10MH
R1801	-	-	-	100K	100K	100K
R1805	-	-	-	10K	10K	10K
R1806	-	-	-	680K	680K	680K
R1807	-	-	-	10K	10K	10K
R1808	-	-	-	10K	10K	10K
R1809	-	-	-	10K	10K	10K
R1810	-	-	-	10K	10K	10K
R1847	180	180	180	68	68	68
R1848	100	100	100	68	68	68
R1916	5.6K	5.6K	5.6K	3.9K	3.9K	3.9K
R1931	33K	33K	33K	39K	39K	39K
R1966	390	390	390	150	150	150

~ VM Board Schematic Diagram [Velocity Modulation, Dynamic Focus and DQP] ~



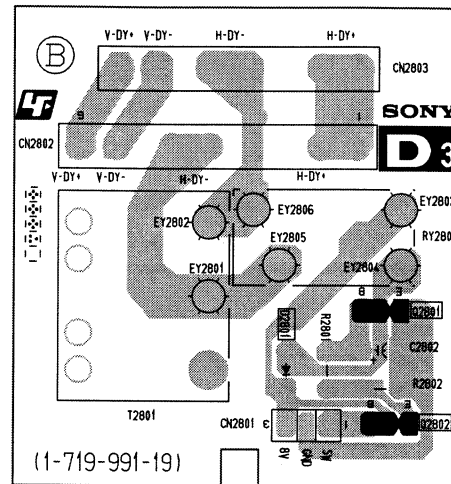
~ D2 Board Schematic Diagram [Smart Mode Deflection] ~



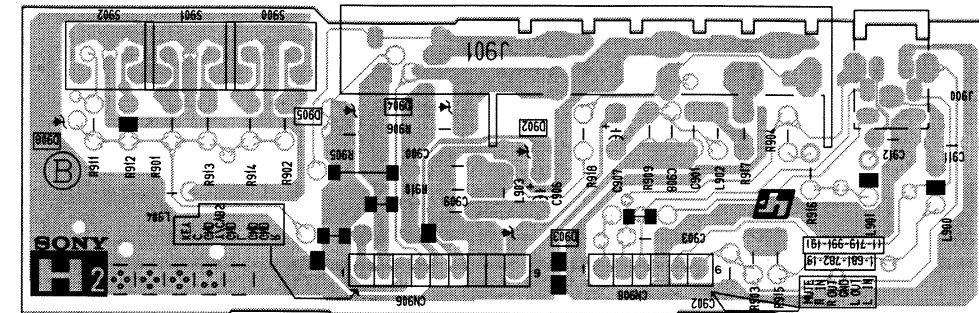
~ D3 Board Schematic Diagram [4:3 Switching] ~

A B C D E F G H I J K L M N

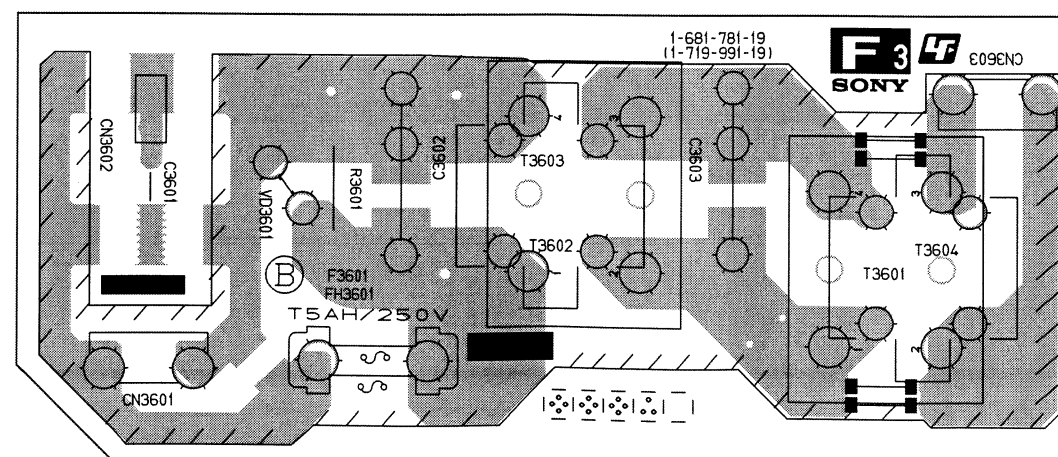
~ D3 Printed Wiring Board Conductor side ~

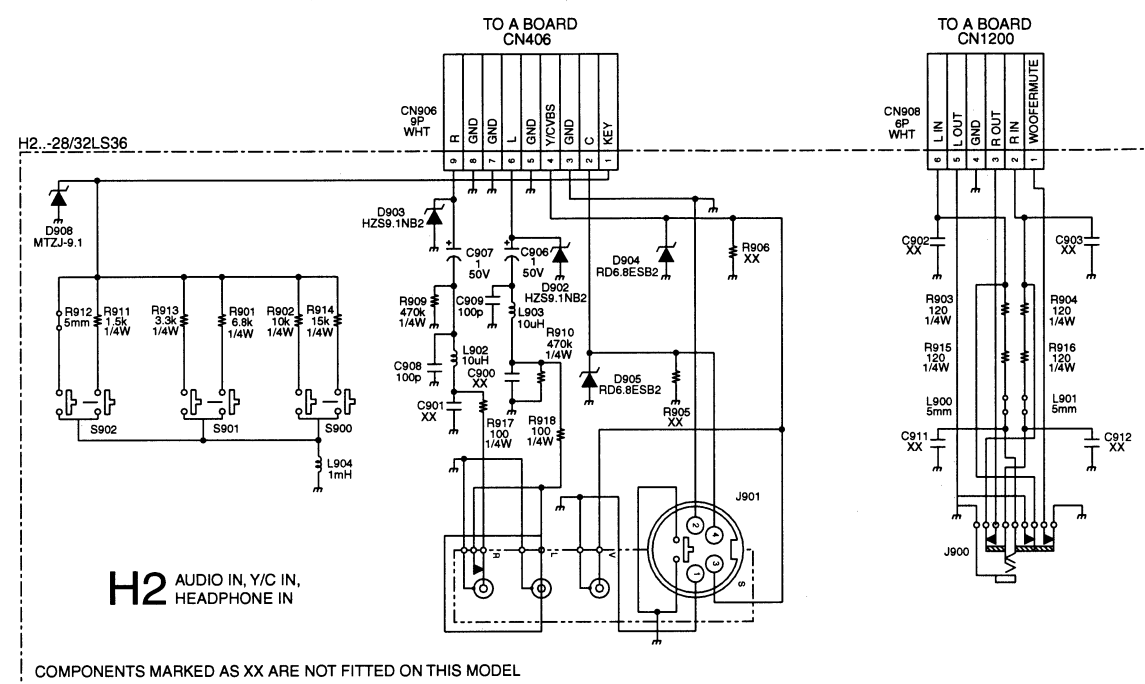


~ H2 Printed Wiring Board Conductor side ~

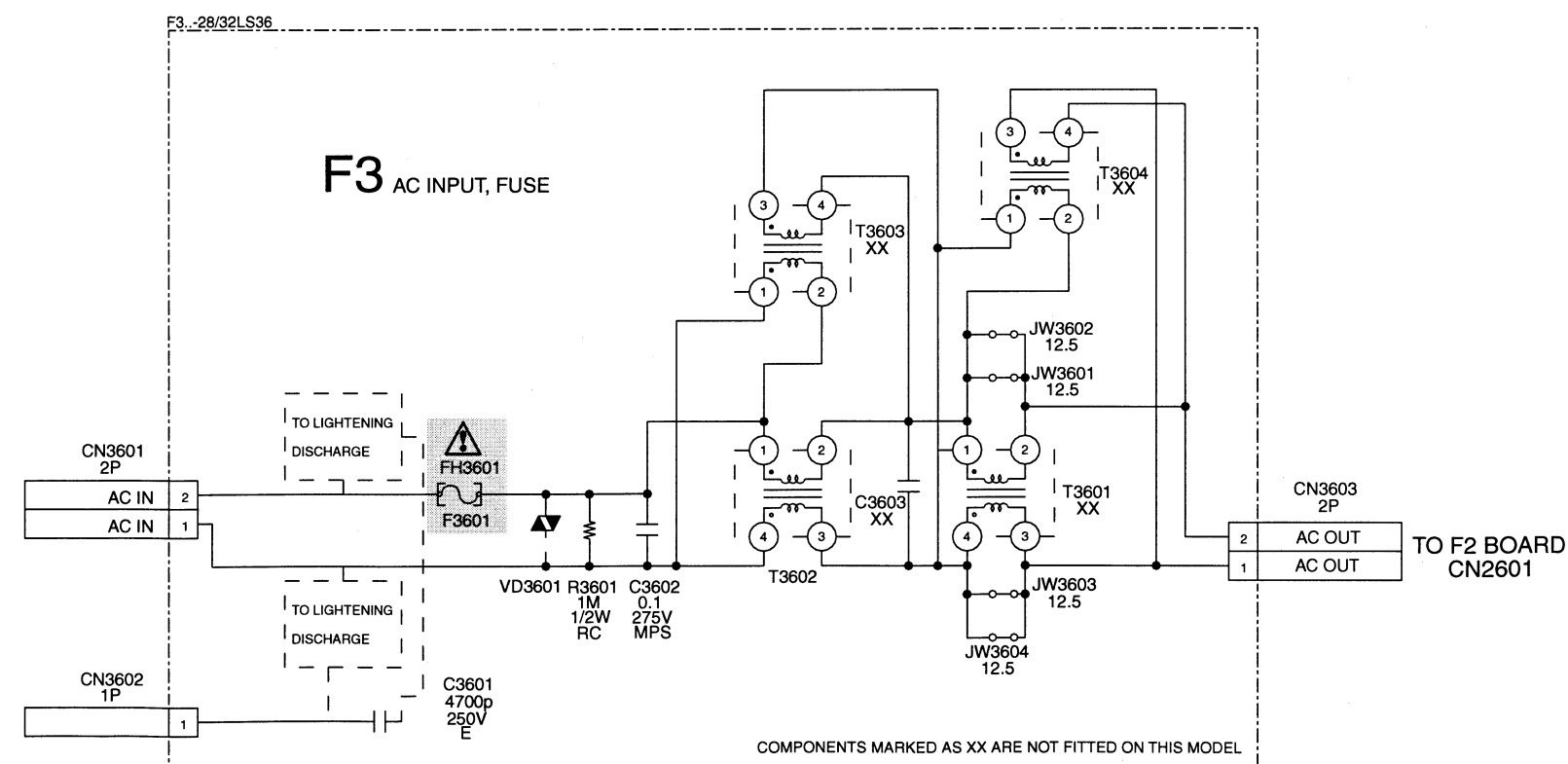


~ F3 Printed Wiring Board Conductor side ~





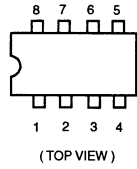
~ H2 Board Schematic Diagram[Audio In, Y/C In, Headphone In] ~



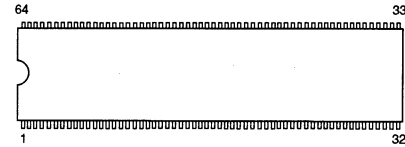
~ F3 Board Schematic Diagram [AC Input, Fuse] ~

5-4. SEMICONDUCTORS

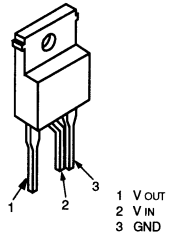
LM358N
LM393DT
LM393N
M5216P
TDA2822M
TEA2124



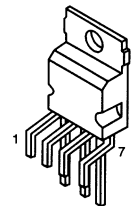
MSP3410G-PP-B8V3



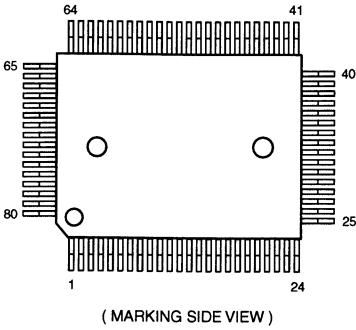
SE-135N
SE135N-LF4



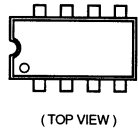
STV9379



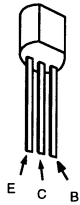
TDA9394H



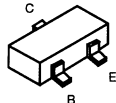
TOP209P



BF421-AMMO
2SA1091-O



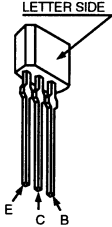
DTA144ESA
DTA144ESA
DTC114ESA
DTC114EKA-T146
DTC143TKA-T146
DTC144EKA-T-146R
R2SA1162-G
2SA1037AK-T146
2SC1623-L5L6
2SD601A-Q-TX
2SC1623-L5-L6
2SC2412K-QR
2SC2412K-T-146-QR



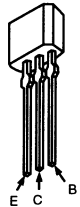
IRF614-005
IRF614-037
IRF620



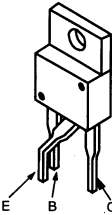
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2SAG33ASQT
2SA933AS-RT
2SC1740S-RT
2SC2785-HFE



2SC2785-HFE

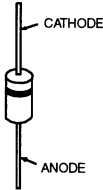


2SK2518-01MR
2SK2251-01-F19
2SK2640-01MR

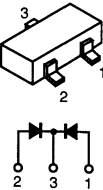


AK04-V1
AU-01Z-V1
BYD33G
BYD33G-AMMO
DINL20-TA
D1NL20U
DINL40-TA2
ERB44-06TP1
EGP20G
EG-1Z-V1
EL1Z
ERD28-06S

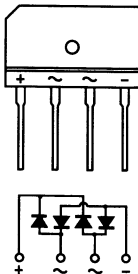
ERD28-06S
ERC06-15S
FMN-G12S
GP08D
RGP10GPKG23
RG15GPKG23
RG1CLF-B1
RU-3AM
RU3YX-LF-C4
RU3YX-V1
RU-4AM-T3
1SS292T-77



DAN202K
DAN202K-T146
MA8330-TX
DTZ33B

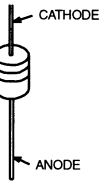


D4SB60L

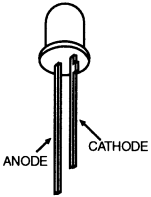


ERA38-06
ERA81-004TP1
ERA83-006
MTZJ-3.6A
MTZJ-T-77-2.2A
HZS9.1NB2
MTZJ-T-77-3.6B
MTZJ-4.7C
MTZJ-T-77-5.1B
MTZJ-T-77-5.6B
MTZJ-T-77-6.8A
MTZJ-T-77-8.2B
MTZJ-7.5B
MTZJ-T-77-9.1A
MTZJ-T-77-9.1B
MTZJ-T-77-10
MTZJ-T-72-10A

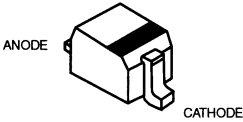
MTZJ-T-72-10B
MTZJ-T-77-15B
MTZJ-T-77-33A
MTZJ-33C
MTZJ-7.5B
P6KE200ASY
RD3.6ES-B2
RD3.9ES-B2
RD5.1ESB2
RD5.6ESB2
RD6.8ES-B2
RD7.5ESB2
RD9.1ES-B3
RD10ESB2
RD15ESB2
1SS119-25
1SS133T-77



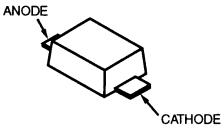
SLA-570KT3F



1SS355TE-17
DTZ-TT11-6.8B
RD12SB2
UDZS-TE-17-4.7B
UDZSTE-175.6B
UDZS-TE-17-6.8B
UDZSTE-179.1B
UDZ-TE-17-22B

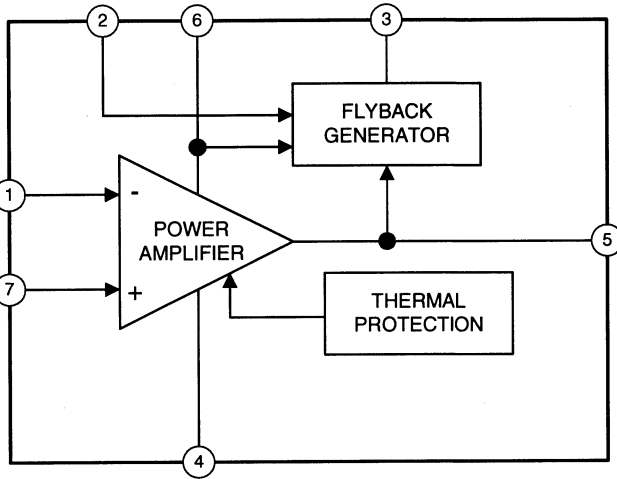


UF4005PKG23

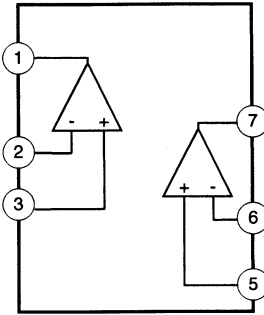


5-5 IC BLOCK DIAGRAMS

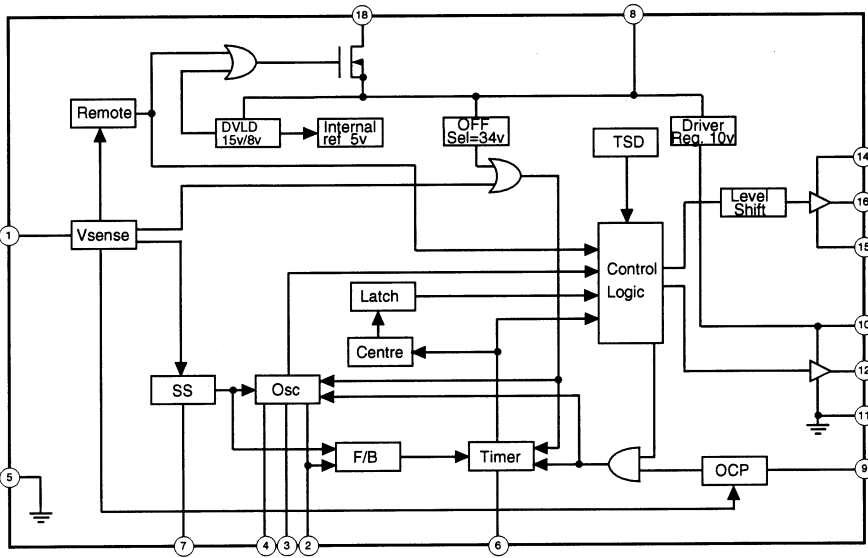
A BOARD IC501 STV9379A



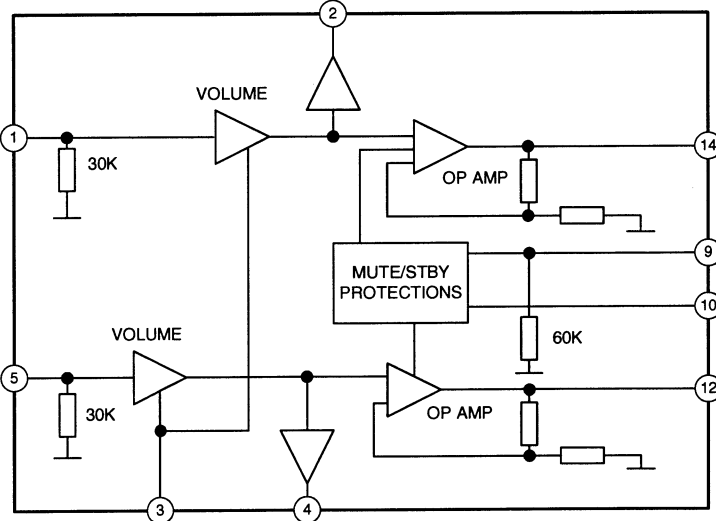
A BOARD IC401/IC531 LM393DT



A BOARD IC601 MCZ3001D



A BOARD IC1201 TDA7495S



SECTION 6
EXPLODED VIEWS

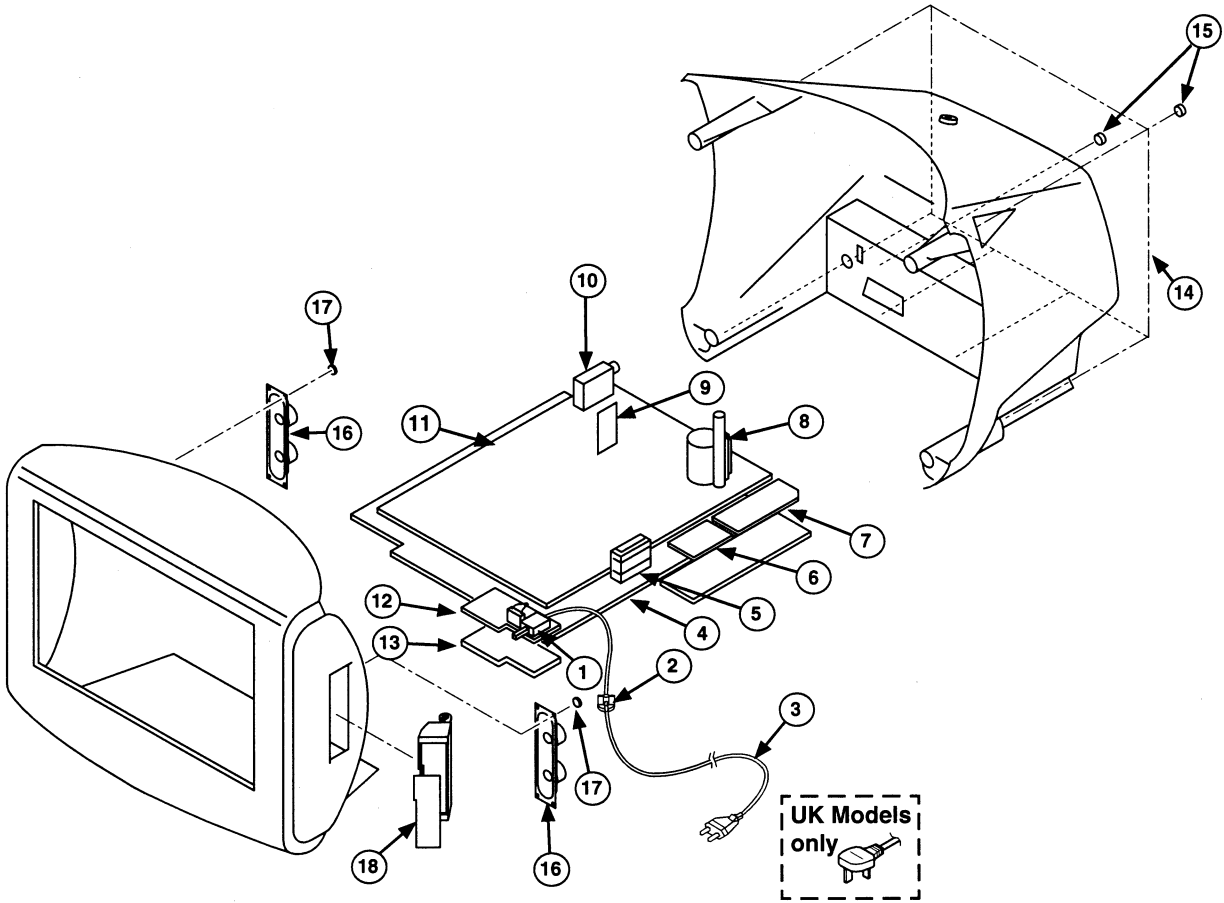
Note : Les composants identifiés par une trame et par une marque Δ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces du numéro spécifié.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.

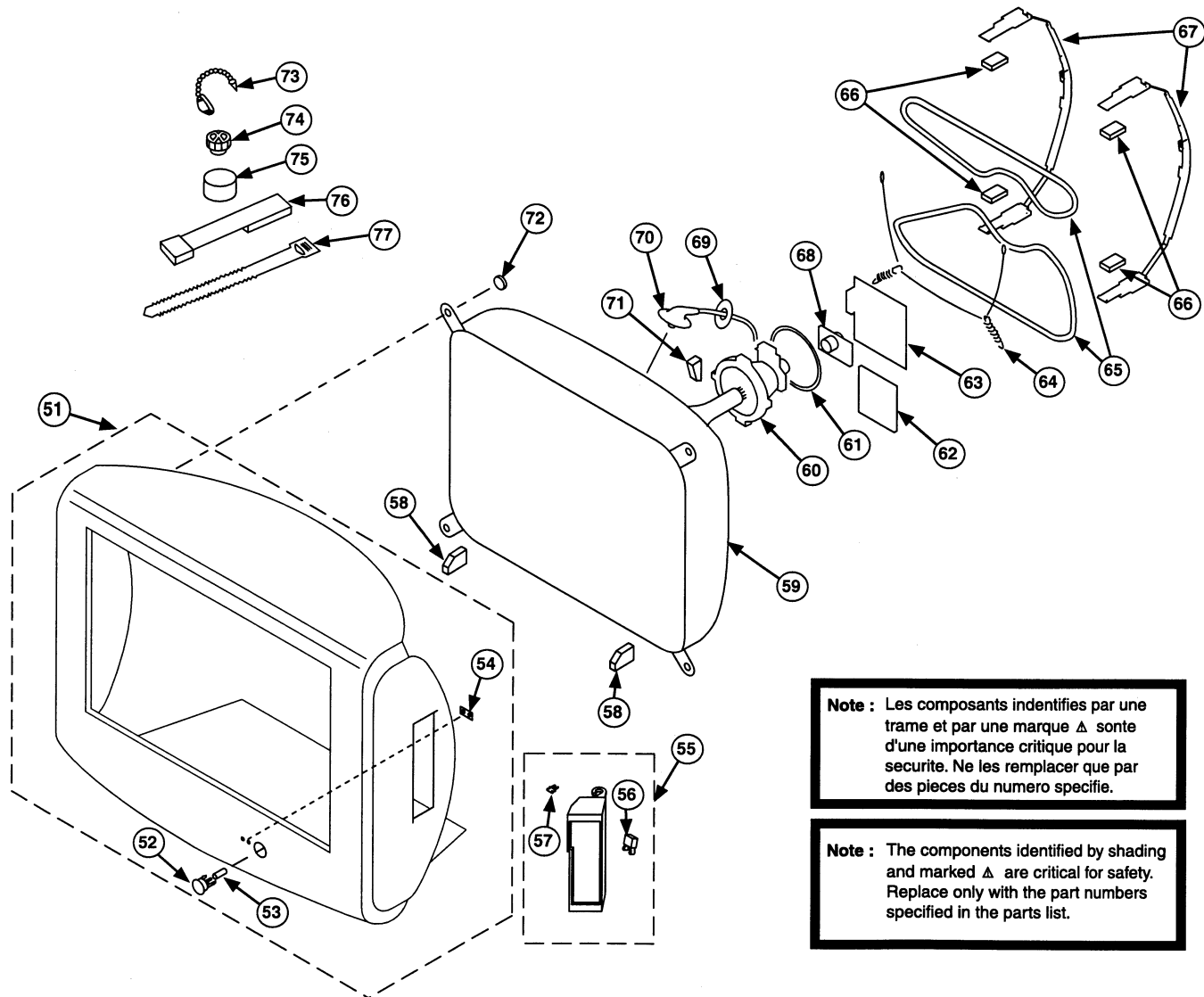
6-1. CHASSIS



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
1	Δ 1-571-433-21	SWITCH, PUSH (AC POWER)		11	*A-1302-226-A	A BOARD, COMPLETE (KV-28LS36B)	
2	*4-202-531-01	AC CORD LOCK (SC)			*A-1302-234-A	A BOARD, COMPLETE (KV-28LS36E)	
3	Δ 1-765-286-11	CORD, POWER (KV-28LS36B/28LS36E/ KV-32LS36B/32LS36E)			*A-1302-232-A	A BOARD, COMPLETE (KV-28LS36U)	
	Δ 1-776-204-11	CORD, POWER (FILTER) (KV-28LS36U/32LS36U)			*A-1302-223-A	A BOARD, COMPLETE (KV-32LS36B)	
4	*4-206-048-12	BRACKET, MAIN			*A-1302-227-A	A BOARD, COMPLETE (KV-32LS36E)	
5	1-424-733-11	COIL, PFC CHOKE 65MMH			*A-1302-225-A	A BOARD, COMPLETE (KV-32LS36U)	
6	*A-1640-431-A	D3 BOARD, COMPLETE		12	*A-1624-099-A	F2 BOARD, COMPLETE	
7	*A-1624-100-A	F3 BOARD, COMPLETE		13	*4-206-055-31	BRACKET, F2 (KV-28LS36)	
8	Δ 1-453-308-41	TRANSFORMER ASSY, FLYBACK (NX4521//Z2B4)			*4-206-055-12	BRACKET, F2 (KV-32LS36)	
9	*A-1642-281-A	D2 BOARD, COMPLETE		14	4-206-089-41	COVER, REAR (KV-28LS36)	
10	1-693-555-14	FRONTEND (TUNER+IF) (KV-28LS36B/32LS36B)			4-206-062-51	COVER, REAR (KV-32LS36)	
	1-693-556-14	FRONTEND (TUNER+IF) (KV-28LS36E/32LS36E)		15	4-039-358-01	SCREW (4x16), (+) BV TAPPING	
	1-693-557-14	FRONTEND (TUNER+IF) (KV-28LS36U/32LS36U)		16	1-529-408-11	SPEAKER (4.2x24CM)	
				17	4-039-356-01	SCREW (3x16), (+) BV TAPPING	
				18	*A-1646-242-A	H2 BOARD, COMPLETE	

SECTION 7
ELECTRICAL PARTS LIST

6-2. PICTURE TUBE



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
51	X-4040-351-7	BEZNET ASSY (KV-28LS36)	52-54	65	Δ 1-416-466-21	COIL, DEMAGNETIC (KV-28LS36)	
	X-4200-724-8	BEZNET ASSY (KV-32LS36)	52-54		Δ 1-416-769-11	COIL, DEMAGNETIC (KV-32LS36)	
52	4-205-948-11	POWER BUTTON		66	*4-203-390-71	CUSHION, DGC	
53	4-202-964-11	SPRING		67	*4-057-303-01	HOLDER, DGC (KV-28LS36)	
54	4-205-375-11	GUIDE, LIGHT			*4-059-569-01	HOLDER, DGC (KV-32LS36)	
55	X-4200-712-5	DOOR ASSY	56-57	68	Δ 8-453-011-11	NECK ASSY, NA299-M	
56	4-047-464-01	CATCHER, PUSH		69	*4-202-693-01	HOLDER, HV CABLE	
57	4-205-682-01	DAMPER		70	Δ 1-251-946-11	CAP ASSY, HIGH VOLTAGE	
58	4-203-098-01	SUPPORTER, CRT (KV-32LS36)		71	4-203-658-01	SPACER, DY	
59	Δ 8-737-786-05	PICTURE TUBE (W66LLX060X) (KV-28LS36)		72	4-046-765-12	SCREW, TAPPING 7 + CROWN WASHER	(KV-28LS36)
	Δ 8-735-079-05	PICTURE TUBE (W76LLZ060X) (KV-32LS36)			4-204-225-01	PT-SCREW (KV-32LS36)	
60	Δ 8-451-521-21	DEFLECTION YOKE (Y28RVC3-B2) (KV-28LS36)		73	4-308-870-00	CLIP, LEAD WIRE	
	Δ 1-451-520-31	DEFLECTION YOKE (Y32RVC3) (KV-32LS36)		74	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
61	1-452-896-11	COIL, NA ROTATION (RT-200)		75	1-452-032-00	MAGNET, DISK; 10MM	
62	*A-1644-124-A	VM BOARD, COMPLETE (KV-28LS36)		76	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
	*A-1645-049-A	VM BOARD, COMPLETE (KV-32LS36)		77	3-701-007-00	BAND, BINDING	
63	*A-1638-156-A	C BOARD, COMPLETE					
64	4-200-433-01	SPRING, EXTENSION					

PARTS LISTING TABLE OF CONTENTS

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KV-32LS36 50
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VM BOARD COMMON Parts List :	Parts common to all models listed in this manual 52
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Note : Refer to the designated variant parts list when seeking a part indicated by an asterisk (*) Parts indicated (XX) on the Schematic Diagram are not used in this model and therefore do not appear in the Parts List.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
* A-1302-226-A	A Board, Complete (KV-28LS36B)			C105	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C428	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
* A-1302-234-A	A Board, Complete (KV-28LS36E)			C106	1-126-933-11	ELECT 100UF	20.00% 16V	C429	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
* A-1302-232-A	A Board, Complete (KV-28LS36U)			C112	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C430	1-102-114-00	CERAMIC 470PF	10.00% 50V
* A-1302-223-A	A Board, Complete (KV-32LS36B)			C204	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V	C435	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
* A-1302-227-A	A Board, Complete (KV-32LS36E)			C211	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C436	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
* A-1302-225-A	A Board, Complete (KV-32LS36U)										
A Board, Common Parts											
	* A-1631-149-A	MOUNTED PC BOARD, A VAR 32LS35		C213	1-216-295-91	SHORT CHIP 0		C437	1-164-346-11	CERAMIC CHIP 1UF	16V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C214	1-163-253-11	CERAMIC CHIP 120PF	5.00% 50V	C438	1-164-346-11	CERAMIC CHIP 1UF	16V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C215	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V	C445	1-126-964-11	ELECT 10UF	20.00% 50V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C216	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C446	1-126-964-11	ELECT 10UF	20.00% 50V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C217	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V	C447	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
	< CAPACITOR >			C218	1-216-295-91	SHORT CHIP 0		C449	1-216-025-11	RES-CHIP 100	5% 1/10W
				C221	1-163-109-00	CERAMIC CHIP 47PF	5.00% 50V	C501	1-126-968-11	ELECT 100UF	20.00% 50V
				C222	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C502	1-163-038-91	CERAMIC CHIP 0.1UF	25V
				C223	1-126-965-91	ELECT 22UF	20.00% 50V	C503	1-126-968-11	ELECT 100UF	20.00% 50V
				C224	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C504	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C002	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V	C225	1-126-157-11	ELECT 10UF	20.00% 16V	C505	1-137-194-81	FILM 0.47UF	5.00% 50V
C004	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V	C226	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C506	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C005	1-126-916-11	ELECT 1000UF	20.00% 6.3V	C227	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C509	1-107-364-11	MYLAR 0.01UF	10.00% 200V
C006	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V	C228	1-126-965-91	ELECT 22UF	20.00% 50V	C510	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V
C009	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C229	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V	C513	1-107-662-11	ELECT 22UF	20.00% 350V
C010	1-164-005-11	CERAMIC CHIP 0.47UF	25V	C230	1-164-336-11	CERAMIC CHIP 0.33UF	25V	C515	1-104-666-11	ELECT 220UF	20.00% 25V
C011	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V	C232	1-126-157-11	ELECT 10UF	20.00% 16V	C517	1-115-781-11	ELECT 220UF	20.00% 25V
C012	1-126-963-11	ELECT 4.7UF	20.00% 50V	C233	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C518	1-106-375-12	MYLAR 0.022UF	5.00% 200V
C013	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C234	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V	C519	1-163-275-11	CERAMIC CHIP 0.001UF	5.00% 50V
C014	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C235	1-164-005-11	CERAMIC CHIP 0.47UF	25V	C520	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C015	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C236	1-126-157-11	ELECT 10UF	20.00% 16V	C524	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C1230	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V	D106	8-719-069-55	DIODE UDZSTE-175.6B	
C1231	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V	D107	8-719-069-55	DIODE UDZSTE-175.6B	
C1232	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V	D203	8-719-069-55	DIODE UDZSTE-175.6B	
C1235	1-126-960-11	ELECT 1UF	20.00% 50V	D207	6-500-028-01	DIODE MM3Z9V1ST1	
C1236	1-126-960-11	ELECT 1UF	20.00% 50V	D210	8-719-069-55	DIODE UDZSTE-175.6B	
< CONNECTOR >				D211	6-500-028-01	DIODE MM3Z9V1ST1	
CN001	* 1-816-976-51	PLUG, CONNECTOR 5P		D212	8-719-914-43	DIODE DAN202K	
CN003	* 1-816-978-51	PLUG, CONNECTOR 7P		D228	8-719-069-55	DIODE UDZSTE-175.6B	
CN405	* 1-816-978-51	PLUG, CONNECTOR 7P		D235	8-719-069-55	DIODE UDZSTE-175.6B	
CN406	* 1-564-512-11	PLUG, CONNECTOR 9P		D236	6-500-028-01	DIODE MM3Z9V1ST1	
CN501	1-580-798-11	CONNECTOR PIN (DY)		D401	8-719-978-33	DIODE DTZ-TT11-6.8B	
CN506	1-695-915-11	TAB (CONTACT)		D402	8-719-081-98	DIODE MM3Z6V8T1	
CN508	* 1-816-976-51	PLUG, CONNECTOR 5P		D403	8-719-069-55	DIODE UDZSTE-175.6B	
CN509	1-695-915-11	TAB (CONTACT)		D404	8-719-109-89	DIODE RD5.6ESB2	
CN510	1-691-771-11	PLUG (MICRO CONNECTOR) 9P		D405	8-719-081-98	DIODE MM3Z6V8T1	
CN512	* 1-770-723-11	CONNECTOR, BOARD TO BOARD 8P		D406	8-719-081-98	DIODE MM3Z6V8T1	
CN602	Δ 1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P		D407	8-719-081-98	DIODE MM3Z6V8T1	
CN603	Δ * 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P		D408	8-719-978-33	DIODE DTZ-TT11-6.8B	
CN605	Δ * 1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P		D410	8-719-978-33	DIODE DTZ-TT11-6.8B	
CN606	Δ * 1-695-292-11	PIN, CONNECTOR (POWER)		D411	8-719-978-33	DIODE DTZ-TT11-6.8B	
CN1200	* 1-816-977-51	PLUG, CONNECTOR 6P		D412	8-719-081-98	DIODE MM3Z6V8T1	
CN1201	* 1-816-975-51	PLUG, CONNECTOR 4P		D413	8-719-978-33	DIODE DTZ-TT11-6.8B	
CN1202	* 1-816-974-51	PLUG, CONNECTOR 3P		D414	8-719-081-98	DIODE MM3Z6V8T1	
< DIODE >				D418	6-500-028-01	DIODE MM3Z9V1ST1	
D001	8-719-069-55	DIODE UDZSTE-175.6B		D420	8-719-069-55	DIODE UDZSTE-175.6B	
D002	8-719-069-55	DIODE UDZSTE-175.6B		D422	8-719-978-33	DIODE DTZ-TT11-6.8B	
D003	8-719-109-69	DIODE RD3.6ESB2		D423	8-719-081-98	DIODE MM3Z6V8T1	
D005	8-719-929-15	DIODE HZS9.1NB2		D424	6-500-028-01	DIODE MM3Z9V1ST1	
D006	8-719-109-89	DIODE RD5.6ESB2		D427	8-719-082-01	DIODE MM3Z12VT1	
D007	8-719-069-55	DIODE UDZSTE-175.6B		D428	8-719-978-33	DIODE DTZ-TT11-6.8B	
D008	8-719-074-43	DIODE BAS316-115		D429	8-719-978-33	DIODE DTZ-TT11-6.8B	
D010	8-719-074-43	DIODE BAS316-115		D435	6-500-028-01	DIODE MM3Z9V1ST1	
D011	8-719-074-43	DIODE BAS316-115		D436	6-500-028-01	DIODE MM3Z9V1ST1	
D012	8-719-929-15	DIODE HZS9.1NB2		D501	8-719-979-85	DIODE EGP20G	
D013	8-719-109-69	DIODE RD3.6ESB2		D502	8-719-081-90	DIODE PDZ22B-115	
D014	1-216-295-91	SHORT CHIP 0		D503	8-719-069-55	DIODE UDZSTE-175.6B	
D016	8-719-109-89	DIODE RD5.6ESB2		D504	8-719-074-43	DIODE BAS316-115	
D018	8-719-109-69	DIODE RD3.6ESB2		D512	8-719-302-43	DIODE EL1Z	
D019	8-719-978-33	DIODE DTZ-TT11-6.8B		D513	8-719-979-85	DIODE EGP20G	
D021	8-719-978-33	DIODE DTZ-TT11-6.8B		D514	8-719-979-85	DIODE EGP20G	
D022	8-719-069-55	DIODE UDZSTE-175.6B		D534	8-719-302-43	DIODE EL1Z	
D035	8-719-069-55	DIODE UDZSTE-175.6B		D535	8-719-908-03	DIODE GP08D	
D036	8-719-069-55	DIODE UDZSTE-175.6B		D536	8-719-945-80	DIODE ERC06-15S	
D051	8-719-081-98	DIODE MM3Z6V8T1		D537	8-719-070-62	DIODE PDZ9.1B-115	
D101	6-500-159-01	DIODE MA8330-M-TX		D538	8-719-908-03	DIODE GP08D	
D103	8-719-081-98	DIODE MM3Z6V8T1		D539	8-719-312-10	DIODE RU4AM-T3	
D104	8-719-069-55	DIODE UDZSTE-175.6B		D541	1-216-295-91	SHORT CHIP 0	
D105	8-719-069-55	DIODE UDZSTE-175.6B		D573	8-719-082-00	DIODE MM3Z4V7T1	
				D601	8-719-510-53	DIODE D4SB60L	
				D602	8-719-911-19	DIODE 1SS119-25	

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REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
D604	8-719-083-94	DIODE FUF4005		IC603	6-702-992-01	IC TA78M08S	
D608	6-500-175-01	DIODE 1E3-TB		IC604	8-759-648-20	IC L7805CV/LSY	
D610	8-719-110-41	DIODE RD15ESB2		IC608	8-759-591-02	IC L78L33ABZ-AP	
D610	8-719-110-41	DIODE RD15ESB2		IC609	8-759-468-89	IC TOP209P	
D611	8-719-991-33	DIODE 1SS133T-77		IC1201	8-759-831-57	IC TDA7495S	
D612	8-719-991-33	DIODE 1SS133T-77		< SOCKET >			
D613	8-719-911-19	DIODE 1SS119-25		J401	* 1-766-296-21	CONNECTOR, DUAL SCART	
D614	6-500-465-01	DIODE G2SBA60L-5700		J404	1-793-987-11	JACK, PIN 2P	
D618	8-719-022-97	DIODE D2S4MF		< COIL >			
D619	8-719-022-97	DIODE D2S4MF		L001	1-408-611-31	INDUCTOR 47UH	
D620	8-719-109-85	DIODE RD5.1ESB2		L004	1-408-611-31	INDUCTOR 47UH	
D621	8-719-109-89	DIODE RD5.6ESB2		L006	1-408-611-31	INDUCTOR 47UH	
D623	8-719-911-19	DIODE 1SS119-25		L027	1-216-295-91	SHORT CHIP 0	
D625	6-500-246-01	DIODE FB1U4D7M1-B-4		L101	1-412-534-31	INDUCTOR 56UH	
D627	6-500-175-01	DIODE 1E3-TB		L102	1-408-611-31	INDUCTOR 47UH	
D628	8-719-083-49	DIODE P6KE200ASY		L103	1-412-002-31	INDUCTOR 4.7UH	
D629	8-719-083-94	DIODE FUF4005		L104	1-412-002-31	INDUCTOR 4.7UH	
D631	8-719-921-63	DIODE MTZJ-7.5B		L201	1-535-303-00	LEAD, JUMPER (5.0MM)	
D632	6-500-175-01	DIODE 1E3-TB		L203	1-408-602-31	INDUCTOR 8.2UH	
D633	8-719-109-69	DIODE RD3.6ESB2		L205	1-408-591-11	INDUCTOR 1UH	
D638	6-500-069-01	DIODE FMW-2109LF654		L206	1-535-303-00	LEAD, JUMPER (5.0MM)	
D640	8-719-921-63	DIODE MTZJ-7.5B		L207	1-408-591-11	INDUCTOR 1UH	
D1203	8-719-914-43	DIODE DAN202K		L401	1-410-993-42	INDUCTOR 1UH	
D1204	8-719-069-55	DIODE UDZSTE-175.6B		L403	1-410-993-42	INDUCTOR 1UH	
D1230	8-719-074-43	DIODE BAS316-115		L404	1-410-993-42	INDUCTOR 1UH	
< FERRITE BEAD >				L405	1-535-303-00	LEAD, JUMPER (5.0MM)	
FB410	1-414-760-21	FERRITE 0UH		L406	1-535-303-00	LEAD, JUMPER (5.0MM)	
FB411	1-414-760-21	FERRITE 0UH		L410	1-216-025-11	RES-CHIP 100 5% 1/10W	
FB412	1-414-760-21	FERRITE 0UH		L430	1-412-002-31	INDUCTOR 4.7UH	
FB601	1-469-578-11	FERRITE 1.1UH		L446	1-216-295-91	SHORT CHIP 0	
FB602	1-469-578-11	FERRITE 1.1UH		L448	1-216-295-91	SHORT CHIP 0	
FB603	1-412-911-11	FERRITE 0UH		L501	1-414-187-11	INDUCTOR 47UH	
FB604	1-469-578-11	FERRITE 1.1UH		L502	1-412-529-11	INDUCTOR 22UH	
FB605	1-469-578-11	FERRITE 1.1UH		L503	1-412-521-31	INDUCTOR 4.7UH	
FB606	Δ 1-412-911-11	FERRITE 0UH		L504	1-535-303-00	LEAD, JUMPER (5.0MM)	
FB607	Δ 1-412-911-11	FERRITE 0UH		L505	1-412-542-41	INDUCTOR 270UH	
< FILTER >				L507	1-412-533-21	INDUCTOR 47UH	
FL201	1-239-803-11	FILTER, EMI		L532	1-412-553-11	INDUCTOR 3.3MH	
< IC >				L533	1-406-989-21	INDUCTOR 10MH	
IC001	6-702-097-02	IC TDA9394H/N1/5/1031		L534	1-216-025-11	RES-CHIP 100 5% 1/10W	
IC004	8-759-675-65	IC M24C08-WMN6T(A)		L535	1-419-633-21	INDUCTOR 10MH	
IC201	6-700-411-02	IC MSP3411G-PP-B8V3		L601	1-408-603-31	INDUCTOR 10UH	
IC401	8-759-665-11	IC LM393DT		L602	1-408-611-31	INDUCTOR 47UH	
IC501	8-759-696-71	IC STV9379A		L603	1-412-523-41	INDUCTOR 6.8UH	
IC531	8-759-665-11	IC LM393DT		L1201	1-535-303-00	LEAD, JUMPER (5.0MM)	
IC601	8-759-670-30	IC MCZ3001D		L1203	1-535-303-00	LEAD, JUMPER (5.0MM)	
IC602	8-749-016-19	IC SE135N-LF4					

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A

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< PHOTOCOUPLER >				JR210	1-216-295-91	SHORT CHIP	0
PH601	Δ 8-749-010-64	PHOTO COUPLER PC123F2		JR211	1-216-296-11	SHORT CHIP	0
				JR213	1-216-295-91	SHORT CHIP	0
				JR401	1-216-295-91	SHORT CHIP	0
				JR418	1-216-296-11	SHORT CHIP	0
< PROTECTOR MODULE >				JR423	1-216-296-11	SHORT CHIP	0
PS1201	Δ 1-533-597-31	IC LINK	5A 90V	JR505	1-216-295-91	SHORT CHIP	0
				JR506	1-216-296-11	SHORT CHIP	0
< TRANSISTOR >				JR601	1-216-295-91	SHORT CHIP	0
Q013	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR609	1-216-295-91	SHORT CHIP	0
Q049	8-729-120-28	TRANSISTOR 2SC1623-L5L6		JR610	1-216-295-91	SHORT CHIP	0
Q202	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R					
Q203	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R					
Q212	8-729-422-33	TRANSISTOR 2SD601A-Q-TX					
Q401	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R003	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q409	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R004	1-216-033-00	RES-CHIP	220 5% 1/10W
Q411	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R005	1-216-041-00	RES-CHIP	470 5% 1/10W
Q532	8-729-053-33	TRANSISTOR IRF614-037		R006	1-216-025-11	RES-CHIP	100 5% 1/10W
Q533	8-729-049-08	TRANSISTOR BU2515DX-127		R007	1-216-025-11	RES-CHIP	100 5% 1/10W
Q535	8-729-053-33	TRANSISTOR IRF614-037		R008	1-216-025-11	RES-CHIP	100 5% 1/10W
Q576	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		R009	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q601	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R010	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE		R011	1-216-295-91	SHORT CHIP	0
Q603	8-729-037-17	TRANSISTOR KRA104M-AT		R012	1-216-121-11	RES-CHIP	1M 5% 1/10W
Q604	8-729-036-60	TRANSISTOR KRC104M-AT		R014	1-216-069-00	RES-CHIP	6.8K 5% 1/10W
Q606	8-729-053-36	TRANSISTOR 2SK2640-01MR-F122		R017	1-216-025-11	RES-CHIP	100 5% 1/10W
Q607	8-729-053-36	TRANSISTOR 2SK2640-01MR-F122		R018	1-208-820-11	METAL CHIP	39K 0.5% 1/10W
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R020	1-216-077-91	RES-CHIP	15K 5% 1/10W
Q609	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R023	1-216-035-00	RES-CHIP	270 5% 1/10W
Q1230	8-729-027-56	TRANSISTOR DTC143TKA-T146		R024	1-216-025-11	RES-CHIP	100 5% 1/10W
Q1231	8-729-027-56	TRANSISTOR DTC143TKA-T146		R025	1-216-025-11	RES-CHIP	100 5% 1/10W
Q1232	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R026	1-216-025-11	RES-CHIP	100 5% 1/10W
Q1233	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R027	1-216-025-11	RES-CHIP	100 5% 1/10W
< RESISTOR >				R028	1-216-025-11	RES-CHIP	100 5% 1/10W
JR4	1-216-295-91	SHORT CHIP	0	R029	1-216-061-91	RES-CHIP	3.3K 5% 1/10W
JR7	1-216-295-91	SHORT CHIP	0	R030	1-216-821-11	METAL CHIP	1K 5% 1/10W
JR9	1-216-295-91	SHORT CHIP	0	R031	1-216-061-91	RES-CHIP	3.3K 5% 1/10W
JR10	1-216-295-91	SHORT CHIP	0	R032	1-216-061-91	RES-CHIP	3.3K 5% 1/10W
JR16	1-216-296-11	SHORT CHIP	0	R033	1-216-073-91	RES-CHIP	10K 5% 1/10W
JR17	1-216-295-91	SHORT CHIP	0	R034	1-216-129-00	RES-CHIP	2.2M 5% 1/10W
JR21	1-216-818-11	METAL CHIP	560 5% 1/10W	R035	1-216-101-00	RES-CHIP	150K 5% 1/10W
JR24	1-216-295-91	SHORT CHIP	0	R036	1-216-083-00	RES-CHIP	27K 5% 1/10W
JR25	1-216-295-91	SHORT CHIP	0	R039	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
JR101	1-216-295-91	SHORT CHIP	0	R040	1-216-033-00	RES-CHIP	220 5% 1/10W
JR105	1-216-295-91	SHORT CHIP	0	R041	1-216-025-11	RES-CHIP	100 5% 1/10W
JR204	1-216-296-11	SHORT CHIP	0	R042	1-216-025-11	RES-CHIP	100 5% 1/10W
JR206	1-216-295-91	SHORT CHIP	0	R044	1-216-073-91	RES-CHIP	10K 5% 1/10W
JR208	1-216-295-91	SHORT CHIP	0	R045	1-216-129-00	RES-CHIP	2.2M 5% 1/10W
JR209	1-216-295-91	SHORT CHIP	0	R046	1-216-025-11	RES-CHIP	100 5% 1/10W
				R047	1-216-025-11	RES-CHIP	100 5% 1/10W
				R048	1-216-073-91	RES-CHIP	10K 5% 1/10W
				R049	1-216-049-11	RES-CHIP	1K 5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R050	1-216-025-11	RES-CHIP	100 5% 1/10W	R253	1-216-025-11	RES-CHIP	100 5% 1/10W
R051	1-216-295-91	SHORT CHIP	0	R254	1-216-025-11	RES-CHIP	100 5% 1/10W
R052	1-216-295-91	SHORT CHIP	0	R401	1-410-993-42	INDUCTOR	1UH
R053	1-216-095-00	RES-CHIP	82K 5% 1/10W	R402	1-216-041-00	RES-CHIP	470 5% 1/10W
R055	1-216-025-11	RES-CHIP	100 5% 1/10W	R403	1-216-113-00	RES-CHIP	470K 5% 1/10W
R056	1-216-081-00	RES-CHIP	22K 5% 1/10W	R404	1-216-113-00	RES-CHIP	470K 5% 1/10W
R060	1-216-025-11	RES-CHIP	100 5% 1/10W	R405	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R061	1-216-025-11	RES-CHIP	100 5% 1/10W	R406	1-216-296-11	SHORT CHIP	0
R070	1-216-025-11	RES-CHIP	100 5% 1/10W	R407	1-216-022-00	RES-CHIP	75 5% 1/10W
R071	1-216-049-11	RES-CHIP	1K 5% 1/10W	R408	1-216-022-00	RES-CHIP	75 5% 1/10W
R072	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	R409	1-216-025-11	RES-CHIP	100 5% 1/10W
R073	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R410	1-216-025-11	RES-CHIP	100 5% 1/10W
R074	1-216-073-91	RES-CHIP	10K 5% 1/10W	R411	1-216-022-00	RES-CHIP	75 5% 1/10W
R090	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R412	1-216-025-11	RES-CHIP	100 5% 1/10W
R091	1-216-081-00	RES-CHIP	22K 5% 1/10W	R413	1-216-113-00	RES-CHIP	470K 5% 1/10W
R092	1-216-073-91	RES-CHIP	10K 5% 1/10W	R414	1-216-022-00	RES-CHIP	75 5% 1/10W
R094	1-216-025-11	RES-CHIP	100 5% 1/10W	R415	1-216-022-00	RES-CHIP	75 5% 1/10W
R095	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R416	1-216-027-00	RES-CHIP	120 5% 1/10W
R096	1-216-073-91	RES-CHIP	10K 5% 1/10W	R417	1-216-113-00	RES-CHIP	470K 5% 1/10W
R101	1-216-093-91	RES-CHIP	68K 5% 1/10W	R418	1-216-113-00	RES-CHIP	470K 5% 1/10W
R102	1-216-097-11	RES-CHIP	100K 5% 1/10W	R419	1-216-022-00	RES-CHIP	75 5% 1/10W
R103	1-216-061-91	RES-CHIP	3.3K 5% 1/10W	R420	1-216-073-91	RES-CHIP	10K 5% 1/10W
R105	1-414-813-11	FERRITE	0UH	R421	1-216-049-11	RES-CHIP	1K 5% 1/10W
R106	1-215-900-11	METAL OXIDE	22K 5% 2W	R422	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R107	1-216-025-11	RES-CHIP	100 5% 1/10W	R423	1-216-113-00	RES-CHIP	470K 5% 1/10W
R108	1-216-025-11	RES-CHIP	100 5% 1/10W	R424	1-216-113-00	RES-CHIP	470K 5% 1/10W
R201	1-216-025-11	RES-CHIP	100 5% 1/10W	R425	1-216-085-91	RES-CHIP	33K 5% 1/10W
R202	1-216-085-91	RES-CHIP	33K 5% 1/10W	R426	1-216-073-91	RES-CHIP	10K 5% 1/10W
R203	1-216-025-11	RES-CHIP	100 5% 1/10W	R427	1-216-113-00	RES-CHIP	470K 5% 1/10W
R211	1-216-081-00	RES-CHIP	22K 5% 1/10W	R428	1-216-073-91	RES-CHIP	10K 5% 1/10W
R212	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R429	1-216-089-91	RES-CHIP	47K 5% 1/10W
R213	1-216-081-00	RES-CHIP	22K 5% 1/10W	R430	1-216-073-91	RES-CHIP	10K 5% 1/10W
R214	1-216-295-91	SHORT CHIP	0	R431	1-216-073-91	RES-CHIP	10K 5% 1/10W
R215	1-216-037-00	RES-CHIP	330 5% 1/10W	R433	1-216-073-91	RES-CHIP	10K 5% 1/10W
R216	1-216-097-11	RES-CHIP	100K 5% 1/10W	R434	1-216-073-91	RES-CHIP	10K 5% 1/10W
R217	1-216-073-91	RES-CHIP	10K 5% 1/10W	R435	1-216-295-91	SHORT CHIP	0
R220	1-216-017-91	RES-CHIP	47 5% 1/10W	R438	1-216-022-00	RES-CHIP	75 5% 1/10W
R221	1-216-190-00	RES-CHIP	470 5% 1/8W	R440	1-216-049-11	RES-CHIP	1K 5% 1/10W
R232	1-216-025-11	RES-CHIP	100 5% 1/10W	R441	1-216-051-00	RES-CHIP	1.2K 5% 1/10W
R233	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R442	1-216-085-91	RES-CHIP	33K 5% 1/10W
R234	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R443	1-216-073-91	RES-CHIP	10K 5% 1/10W
R235	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R444	1-216-061-91	RES-CHIP	3.3K 5% 1/10W
R236	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R445	1-216-022-00	RES-CHIP	75 5% 1/10W
R238	1-216-025-11	RES-CHIP	100 5% 1/10W	R446	1-216-113-00	RES-CHIP	470K 5% 1/10W
R246	1-260-107-11	CARBON	4.7K 5% 1/2W	R447	1-216-295-91	SHORT CHIP	0
R248	1-249-429-11	CARBON	10K 5% 1/4W	R448	1-216-113-00	RES-CHIP	470K 5% 1/10W
R249	1-216-097-11	RES-CHIP	100K 5% 1/10W	R449	1-216-295-91	SHORT CHIP	0
R250	1-216-081-00	RES-CHIP	22K 5% 1/10W	R450	1-216-041-00	RES-CHIP	470 5% 1/10W
R251	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R451	1-216-041-00	RES-CHIP	470 5% 1/10W
R252	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R453	1-216-171-00	RES-CHIP	75 5% 1/8W

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R454	1-216-001-00	RES-CHIP	10	5%	1/10W	R595	1-249-377-11	CARBON	0.47	5%	1/4W
R460	1-216-049-11	RES-CHIP	1K	5%	1/10W	R603	Δ 1-202-933-61	FUSIBLE	0.1	10%	1/2W
R461	1-216-022-00	RES-CHIP	75	5%	1/10W	R605	1-216-049-11	RES-CHIP	1K	5%	1/10W
R462	1-216-178-00	RES-CHIP	150	5%	1/8W	R608	1-216-073-91	RES-CHIP	10K	5%	1/10W
R500	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R609	1-218-873-11	METAL CHIP	12K	0.5%	1/10W
R501	1-216-091-00	RES-CHIP	56K	5%	1/10W	R610	1-215-481-00	METAL	330K	1%	1/4W
R502	1-216-073-91	RES-CHIP	10K	5%	1/10W	R611	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R503	1-215-888-00	METAL OXIDE	220	5%	2W	R612	1-249-429-11	CARBON	10K	5%	1/4W
R504	1-249-385-11	CARBON	2.2	5%	1/4W	R613	Δ 1-219-720-91	METAL	10M	5%	1W
R505	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R615	1-215-385-00	METAL	33	1%	1/4W
R506	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	R616	1-216-101-00	RES-CHIP	150K	5%	1/10W
R507	1-216-349-00	METAL OXIDE	1	5%	1W	R617	1-216-099-00	RES-CHIP	120K	5%	1/10W
R508	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W	R619	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R509	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	R621	1-216-113-00	RES-CHIP	470K	5%	1/10W
R510	1-216-113-00	RES-CHIP	470K	5%	1/10W	R622	1-216-073-91	RES-CHIP	10K	5%	1/10W
R512	1-249-382-11	CARBON	1.2	5%	1/4W	R623	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R514	1-249-377-11	CARBON	0.47	5%	1/4W	R624	1-216-001-00	RES-CHIP	10	5%	1/10W
R515	1-249-377-11	CARBON	0.47	5%	1/4W	R625	1-216-073-91	RES-CHIP	10K	5%	1/10W
R520	1-215-884-11	METAL OXIDE	47	5%	2W	R627	1-249-389-11	CARBON	4.7	5%	1/4W
R522	1-216-097-11	RES-CHIP	100K	5%	1/10W	R628	1-247-791-91	CARBON	22	5%	1/4W
R523	1-216-121-11	RES-CHIP	1M	5%	1/10W	R629	1-216-073-91	RES-CHIP	10K	5%	1/10W
R524	1-216-075-00	RES-CHIP	12K	5%	1/10W	R632	1-249-417-11	CARBON	1K	5%	1/4W
R525	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R633	1-215-481-00	METAL	330K	1%	1/4W
R526	1-216-089-91	RES-CHIP	47K	5%	1/10W	R634	1-217-625-00	METAL	0.05	10%	2W
R527	1-216-077-91	RES-CHIP	15K	5%	1/10W	R635	1-260-300-11	CARBON	4.7	5%	1/2W
R528	1-216-097-11	RES-CHIP	100K	5%	1/10W	R636	1-249-413-11	CARBON	470	5%	1/4W
R529	1-216-073-91	RES-CHIP	10K	5%	1/10W	R637	1-216-041-00	RES-CHIP	470	5%	1/10W
R530	1-216-085-91	RES-CHIP	33K	5%	1/10W	R639	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R531	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R640	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R532	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R641	1-216-097-11	RES-CHIP	100K	5%	1/10W
R533	1-216-077-91	RES-CHIP	15K	5%	1/10W	R642	1-249-405-11	CARBON	100	5%	1/4W
R536	1-216-025-11	RES-CHIP	100	5%	1/10W	R643	1-216-089-91	RES-CHIP	47K	5%	1/10W
R538	1-535-143-71	LEAD, JUMPER (7.5MM)				R645	1-216-073-91	RES-CHIP	10K	5%	1/10W
R539	1-535-143-41	LEAD, JUMPER (17.5MM)				R647	1-216-049-11	RES-CHIP	1K	5%	1/10W
R543	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R648	1-215-481-00	METAL	330K	1%	1/4W
R544	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R649	1-208-805-11	METAL CHIP	9.1K	0.5%	1/10W
R547	1-535-143-71	LEAD, JUMPER (7.5MM)				R650	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R548	1-249-387-11	CARBON	3.3	5%	1/4W	R651	Δ 1-220-926-11	FUSIBLE	0.47	10%	1/2W
R549	1-216-361-21	METAL OXIDE	0.22	5%	2W	R654	1-216-001-00	RES-CHIP	10	5%	1/10W
R550	1-215-880-00	METAL OXIDE	10	5%	2W	R656	1-216-365-00	METAL OXIDE	0.47	5%	2W
R551	1-215-871-11	METAL OXIDE	2.2K	5%	1W	R660	1-247-807-31	CARBON	100	5%	1/4W
R552	1-216-848-11	METAL CHIP	180K	5%	1/10W	R1202	1-216-073-91	RES-CHIP	10K	5%	1/10W
R553	1-249-381-11	CARBON	1	5%	1/4W	R1203	1-216-049-11	RES-CHIP	1K	5%	1/10W
R555	1-216-059-00	RES-CHIP	2.7K	5%	1/10W	R1207	1-216-077-91	RES-CHIP	15K	5%	1/10W
R556	1-215-916-00	METAL OXIDE	680	5%	3W	R1210	1-216-077-91	RES-CHIP	15K	5%	1/10W
R557	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	R1213	1-216-049-11	RES-CHIP	1K	5%	1/10W
R558	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R1214	1-216-049-11	RES-CHIP	1K	5%	1/10W
R589	1-216-097-11	RES-CHIP	100K	5%	1/10W	R1215	1-216-049-11	RES-CHIP	1K	5%	1/10W
R590	1-216-081-00	RES-CHIP	22K	5%	1/10W	R1216	1-216-025-11	RES-CHIP	100	5%	1/10W
R591	1-215-892-11	METAL OXIDE	1K	5%	2W	R1230	1-216-041-00	RES-CHIP	470	5%	1/10W

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R1231	1-216-113-00	RES-CHIP	470K	5%	1/10W	R517	1-215-451-00	METAL	18K	1%	1/4W
R1232	1-216-041-00	RES-CHIP	470	5%	1/10W	R518	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R1233	1-216-113-00	RES-CHIP	470K	5%	1/10W	R521	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1235	1-216-073-91	RES-CHIP	10K	5%	1/10W	R534	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1236	1-216-073-91	RES-CHIP	10K	5%	1/10W	R535	1-216-099-00	RES-CHIP	120K	5%	1/10W
< RELAY >						R540	1-212-970-00	FUSIBLE	33	5%	1/2W
RY601	△ 1-755-388-11	RELAY (AC POWER)				R546	1-216-480-11	METAL OXIDE	820	5%	3W
< SWITCH >						R568	1-215-916-00	METAL OXIDE	680	5%	3W
SW532	1-572-707-11	SWITCH, LEVER				R569	1-216-073-91	RES-CHIP	10K	5%	1/10W
< TRANSFORMER >						R570	1-216-049-11	RES-CHIP	1K	5%	1/10W
T511	△ 1-453-308-41	TRANSFORMER ASSY, FLYBACK NX-4521//Z2B4				R571	1-216-035-00	RES-CHIP	270	5%	1/10W
T531	1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE				R572	1-216-039-00	RES-CHIP	390	5%	1/10W
T532	1-426-981-91	TRANSFORMER, FERRITE (PMT)				R583	1-216-073-91	RES-CHIP	10K	5%	1/10W
T602	△ 1-431-732-31	TRANSFORMER, CONVERTER (SRT)				R600	1-218-837-11	METAL CHIP	390	0.5%	1/10W
T603	△ 1-435-976-12	TRANSFORMER, CONVERTER (PIT)				R601	1-218-839-11	METAL CHIP	470	0.5%	1/10W
< THERMISTOR >						< TRANSFORMER >					
TH601	1-803-586-41	THERMISTOR				T533	1-433-980-12	TRANSFORMER, HORIZONTAL LINEAR			
THP601	△ 1-803-951-11	THERMISTOR, PTC				< TUNER >					
< CRYSTAL >						TU101	1-693-555-14	FRONTEND (TUNER+IF)	(KV-28LS36B)		
X001	1-578-774-71	VIBRATOR, CRYSTAL				TU101	1-693-556-14	FRONTEND (TUNER+IF)	(KV-28LS36E)		
X201	1-760-628-11	VIBRATOR, CRYSTAL				TU101	1-693-557-14	FRONTEND (TUNER+IF)	(KV-28LS36U)		
A Board Variant Parts KV-28LS36						A Board Variant Parts KV-32LS36					
< CAPACITOR >						< CAPACITOR >					
C522	1-136-170-00	FILM	0.27UF	5.00%	50V	C522	NOT FITTED				
C536	1-115-521-11	FILM	0.82UF	5.00%	250V	C536	1-115-522-11	FILM	1UF	5.00%	250V
C539	1-111-230-11	ELECT	1UF	20.00%	160V	C539	1-107-667-11	ELECT	2.2UF	20.00%	400V
C542	1-162-115-00	CERAMIC	330PF	10.00%	2KV	C542	1-161-754-00	CERAMIC	0.001UF	10.00%	2KV
C547	1-115-521-11	FILM	0.82UF	5.00%	250V	C547	1-109-844-11	FILM	0.68UF	5.00%	400V
C555	1-117-652-11	FILM	22000PF	3%	1.2KV	C555	1-127-717-11	FILM	19000PF	3%	1.2KV
C570	1-126-961-11	ELECT	2.2UF	20.00%	50V	C570	NOT FITTED				
< CONNECTOR >						< CONNECTOR >					
CN503	NOT FITTED					CN503	* 1-816-974-51	PLUG, CONNECTOR 3P			
< TRANSISTOR >						< TRANSISTOR >					
Q570	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R				Q570	NOT FITTED				
< RESISTOR >						< RESISTOR >					
R022	1-216-089-91	RES-CHIP	47K	5%	1/10W	R022	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R455	1-216-295-91	SHORT CHIP	0			R455	1-412-002-31	INDUCTOR	4.7UH		
R513	1-216-105-91	RES-CHIP	220K	5%	1/10W	R513	NOT FITTED				
R516	1-214-907-11	METAL	56K	1%	1/2W	R516	1-214-905-11	METAL	47K	1%	1/2W
						R517	1-215-453-00	METAL	22K	1%	1/4W
						R518	1-216-069-00	RES-CHIP	6.8K	5%	1/10W

VM

REF.NO.	PART.NO.	DESCRIPTION	REMARK	REF.NO.	PART.NO.	DESCRIPTION	REMARK		
* A-1644-124-A VM Board, Complete (KV-28LS36)				< IC >					
* A-1645-049-A VM Board, Complete (KV-32LS36)				IC1701	8-759-394-36	IC BA09T			
VM Board, Common Parts				IC1901	8-759-659-67	IC LA6393DLL			
< CAPACITOR >				IC1902	8-759-008-70	IC LM358N			
C1701	1-104-665-11	ELECT	100UF	20.00%	25V	< COIL >			
C1704	1-104-665-11	ELECT	100UF	20.00%	25V	L1701	1-414-183-41	INDUCTOR	10UH
C1844	1-129-716-00	FILM	0.015UF	5.00%	630V	L1843	1-406-989-21	INDUCTOR	10MH
C1845	1-129-725-00	FILM	0.082UF	5.00%	400V	L1901	1-406-677-11	INDUCTOR	10MH
C1901	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V	L1902	1-414-177-11	INDUCTOR	1UH
C1902	1-137-374-11	MYLAR	0.047UF	5.00%	50V	< TRANSISTOR >			
C1903	1-126-964-11	ELECT	10UF	20.00%	50V	Q1840	8-729-119-76	TRANSISTOR	2SA1175-HFE
C1904	1-130-475-00	MYLAR	0.0022UF	5.00%	50V	Q1841	8-729-926-76	TRANSISTOR	IRF620
C1905	1-137-374-11	MYLAR	0.047UF	5.00%	50V	Q1901	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R
C1906	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V	Q1902	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R
C1908	1-109-954-11	ELECT	0.47UF	20.00%	160V	Q1903	8-729-043-95	TRANSISTOR	2SC3840(3)
C1913	1-129-898-00	FILM	0.0022UF	5.00%	630V	Q1906	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R
C1915	1-136-205-11	MYLAR	0.022UF	5.00%	630V	Q1907	8-729-140-97	TRANSISTOR	2SB734-34
C1917	1-102-228-00	CERAMIC	470PF	10.00%	500V	< RESISTOR >			
C1951	1-126-964-11	ELECT	10UF	20.00%	50V	R1842	1-216-809-11	METAL CHIP	100 5% 1/10W
C1952	1-126-964-11	ELECT	10UF	20.00%	50V	R1846	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
C1953	1-137-367-11	MYLAR	0.0033UF	5.00%	50V	R1903	1-216-833-11	METAL CHIP	10K 5% 1/10W
C1954	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V	R1904	1-216-833-11	METAL CHIP	10K 5% 1/10W
C1957	1-126-964-11	ELECT	10UF	20.00%	50V	R1905	1-216-845-11	METAL CHIP	100K 5% 1/10W
C1958	1-136-169-00	FILM	0.22UF	5.00%	50V	R1906	1-216-833-11	METAL CHIP	10K 5% 1/10W
C1959	1-136-169-00	FILM	0.22UF	5.00%	50V	R1907	1-216-845-11	METAL CHIP	100K 5% 1/10W
< CONNECTOR >				R1908	1-216-813-11	METAL CHIP	220 5% 1/10W		
CN1701	1-691-771-11	PLUG (MICRO CONNECTOR)	9P	R1909	1-215-489-00	METAL	680K 1% 1/4W		
CN1718	* 1-770-723-11	CONNECTOR, BOARD TO BOARD	8P	R1910	1-216-864-11	SHORT CHIP	0		
CN1809	1-695-915-11	TAB (CONTACT)		R1911	1-216-833-11	METAL CHIP	10K 5% 1/10W		
< DIODE >				R1912	1-216-857-11	METAL CHIP	1M 5% 1/10W		
D1840	8-719-302-43	DIODE EL1Z		R1913	1-216-821-11	METAL CHIP	1K 5% 1/10W		
D1901	8-719-991-33	DIODE 1SS133T-77		R1914	1-216-825-11	METAL CHIP	2.2K 5% 1/10W		
D1902	8-719-991-33	DIODE 1SS133T-77		R1915	1-216-829-11	METAL CHIP	4.7K 5% 1/10W		
D1903	8-719-991-33	DIODE 1SS133T-77		R1917	1-216-842-11	METAL CHIP	56K 5% 1/10W		
D1904	8-719-991-33	DIODE 1SS133T-77		R1918	1-215-921-11	METAL OXIDE	4.7K 5% 3W		
D1905	8-719-110-41	DIODE RD15ESB2		R1919	1-218-871-11	METAL CHIP	10K 0.5% 1/10W		
D1906	8-719-970-87	DIODE ERA38-06		R1920	1-216-864-11	SHORT CHIP	0		
D1907	8-719-970-87	DIODE ERA38-06		R1923	1-216-845-11	METAL CHIP	100K 5% 1/10W		
D1908	8-719-300-33	DIODE RU-3AM		R1924	1-216-845-11	METAL CHIP	100K 5% 1/10W		
D1909	8-719-991-33	DIODE 1SS133T-77		R1925	1-216-845-11	METAL CHIP	100K 5% 1/10W		
< FERRITE BEAD >				R1953	1-216-850-11	METAL CHIP	270K 5% 1/10W		
FB1701	1-535-303-00	LEAD, JUMPER (5.0MM)		R1954	1-216-851-11	METAL CHIP	330K 5% 1/10W		
				R1955	1-216-849-11	METAL CHIP	220K 5% 1/10W		
				R1956	1-218-463-11	RES-CHIP	8.2M 5% 1/10W		
				R1957	1-216-833-11	METAL CHIP	10K 5% 1/10W		
				R1958	1-216-809-11	METAL CHIP	100 5% 1/10W		

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK				
R1959	1-216-828-11	METAL CHIP	3.9K	5%	1/10W										< TRANSISTOR >				
R1961	1-216-839-11	METAL CHIP	33K	5%	1/10W														
R1962	1-216-839-11	METAL CHIP	33K	5%	1/10W										Q2150	8-729-027-38	TRANSISTOR DTA144EKA-T146		
R1964	1-216-809-11	METAL CHIP	100	5%	1/10W										Q2151	8-729-900-53	TRANSISTOR DTC114EK		
R1965	1-216-817-11	METAL CHIP	470	5%	1/10W										< RESISTOR >				
< TRANSFORMER >																			
T1901	1-433-849-12	TRANSFORMER, FERRITE (DFT)																	
VM Board Variant Parts KV-28LS36																			
< CAPACITOR >																			
C1732	1-216-295-91	SHORT CHIP	0																
C1848	1-136-347-11	FILM	0.0047UF	5.00%	630V														
C1912	1-162-117-00	CERAMIC	100PF	10.00%	500V														
C1914	1-102-030-00	CERAMIC	330PF	10.00%	500V														
C1916	1-127-573-11	CERAMIC CHIP	1UF	10.00%	16V														
< CONNECTOR >																			
CN1702	NOT FITTED																		
< COIL >																			
L1959	1-406-679-11	INDUCTOR	22MH																
< RESISTOR >																			
R1847	NOT FITTED																		
R1848	1-215-911-11	METAL OXIDE	100	5%	3W														
R1901	NOT FITTED																		
R1916	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W														
R1921	1-215-922-11	METAL OXIDE	6.8K	5%	3W														
< TRANSISTOR >																			
R1922	1-215-919-11	METAL OXIDE	2.2K	5%	3W														
R1926	1-216-295-91	SHORT CHIP	0																
R1931	1-216-841-11	METAL CHIP	47K	0.5%	1/10W														
R1960	1-216-833-11	METAL CHIP	10K	0.5%	1/10W														
R1966	NOT FITTED																		
VM Board Variant Parts KV-32LS36																			
< CAPACITOR >																			
C1732	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V														
C1848	1-136-601-11	FILM	0.01UF	5.00%	630V														
C1912	NOT FITTED																		
C1914	1-102-244-00	CERAMIC	220PF	10.00%	500V														
C1916	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V														
< CONNECTOR >																			
CN1702	* 1-816-974-51	PLUG, CONNECTOR 3P																	

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK				
< COIL >						* A-1640-431-A D3 Board, Complete									< TRANSISTOR >				
< RESISTOR >						< CAPACITOR >									< RESISTOR >				
L1959	1-406-677-11	INDUCTOR	10MH																
< TRANSISTOR >																			
R1847	1-216-474-11	METAL OXIDE	82	5%	3W														
R1848	1-216-474-11	METAL OXIDE	82	5%	3W														
R1901	1-216-089-91	RES-CHIP	47K	5%	1/10W														
R1916	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W														
R1921	1-215-921-11	METAL OXIDE	4.7K	5%	3W														
< TRANSISTOR >																			
R1922	1-215-918-00	METAL OXIDE	1.5K	5%	3W														
R1926	NOT FITTED																		
R1931	1-216-689-11	METAL CHIP	39K	0.5%	1/10W														
R1960	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W														
R1966	1-215-886-11	METAL OXIDE	100	5%	2W														
* A-1642-281-A D2 Board, Complete																			
< CAPACITOR >																			
C8802	1-136-104-00	FILM	0.16UF	5.00%	200V														
C8803	1-115-521-11	FILM	0.82UF	5.00%	250V														
C8804	1-136-207-11	MYLAR	0.047UF	5.00%	630V														
< CONNECTOR >																			
CN8801	* 1-778-770-11	CONNECTOR,BOARD TO BOARD (PLUG)																	
CN8802	* 1-816-980-71	PLUG, CONNECTOR 3P																	
< DIODE >																			
D8801	8-719-923-60	DIODE MTZJ-T-77-9.1A																	
D8802	8-719-302-43	DIODE EL1Z																	
D8803	8-719-921-40	DIODE MTZJ-4.7C																	
< IC >																			
IC8801	8-749-010-64	PHOTO COUPLER PC123F2																	
< COIL >																			
L8802	1-406-978-11	INDUCTOR	150UH																
< TRANSISTOR >																			
Q8801	8-729-034-09	TRANSISTOR 2SK2518-01MR																	
Q8802	1-801-806-11	TRANSISTOR DTC144EKA																	
Q8803	1-801-806-11	TRANSISTOR DTC144EKA																	
< RESISTOR >																			
JR8801	1-216-864-11	SHORT CHIP	0																
< TRANSISTOR >																			
R8803	1-249-441-11	CARBON	100K	5%	1/4W														
R8804	1-216-825-11	METAL CHIP	2.2K	5%	1/10W														
R8805	1-216-833-11	METAL CHIP	10K	5%	1/10W														
R8806	1-216-809-11	METAL CHIP	100	5%	1/10W														
R8812	1-218-879-11	METAL CHIP	22K	0.5%	1/10W														

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK				
* A-1640-431-A D3 Board, Complete						< CAPACITOR >									< TRANSISTOR >				
< TRANSISTOR >						< CAPACITOR >									< TRANSISTOR >				
C2802	1-126-965-91	ELECT	22UF	20.00%	50V														
< CONNECTOR >																			
CN2801	* 1-816-980-71	PLUG, CONNECTOR 3P																	
CN2802	* 1-785-270-12	PIN, DY CONNECTOR (PC BOARD)																	
CN2803	* 1-580-798-11	CONNECTOR PIN (DY) 6P																	
< DIODE >																			
D2801	8-719-991-33	DIODE 1SS133T-77																	
< TRANSISTOR >																			
Q2801	8-729-119-78	TRANSISTOR 2SC2785-HFE																	
Q2802	8-729-119-78	TRANSISTOR 2SC2785-HFE																	
< RESISTOR >																			
R2801	1-249-421-11	CARBON	2.2K	5%	1/4W														
R2802	1-249-421-11	CARBON	2.2K	5%	1/4W														
< RELAY >																			
RY2801	1-755-172-11	RELAY																	
< TRANSFORMER >																			
T2801	1-419-090-11	COIL, CHOKE (100UH)																	
* A-1624-099-A F2 Board, Complete																			
< TRANSISTOR >																			
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Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

H2

REF.NO.	PART.NO	DESCRIPTION	REMARK
< CONNECTOR >			
CN906	* 1-564-524-11	PLUG, CONNECTOR 9P	
CN908	* 1-564-521-11	PLUG, CONNECTOR 6P	
< DIODE >			
D902	8-719-929-15	DIODE HZS9.1NB2	
D903	8-719-929-15	DIODE HZS9.1NB2	
D904	8-719-109-97	DIODE RD6.8ESB2	
D905	8-719-109-97	DIODE RD6.8ESB2	
D908	8-719-923-60	DIODE MTZJ-T-77-9.1A	
< SOCKET >			
J900	1-750-264-11	JACK	
J901	1-779-947-11	TERMINAL BLOCK, S	
< COIL >			
L900	1-535-303-00	LEAD, JUMPER (5.0MM)	
L901	1-535-303-00	LEAD, JUMPER (5.0MM)	
L902	1-408-603-31	INDUCTOR 10UH	
L903	1-408-603-31	INDUCTOR 10UH	
L904	1-410-119-11	INDUCTOR 1MH	
< RESISTOR >			
R901	1-249-427-11	CARBON 6.8K 5% 1/4W	
R902	1-249-429-11	CARBON 10K 5% 1/4W	
R903	1-249-406-11	CARBON 120 5% 1/4W	
R904	1-249-406-11	CARBON 120 5% 1/4W	
R909	1-247-895-91	CARBON 470K 5% 1/4W	
R910	1-247-895-91	CARBON 470K 5% 1/4W	
R911	1-249-419-11	CARBON 1.5K 5% 1/4W	
R912	1-535-303-00	LEAD, JUMPER (5.0MM)	
R913	1-247-843-11	CARBON 3.3K 5% 1/4W	
R914	1-249-431-11	CARBON 15K 5% 1/4W	
R915	1-249-406-11	CARBON 120 5% 1/4W	
R916	1-249-406-11	CARBON 120 5% 1/4W	
R917	1-247-807-31	CARBON 100 5% 1/4W	
R918	1-247-807-31	CARBON 100 5% 1/4W	
< SWITCH >			
S900	1-692-979-11	SWITCH, TACTILE	
S901	1-692-979-11	SWITCH, TACTILE	
S902	1-692-979-11	SWITCH, TACTILE	

REF.NO.	PART.NO	DESCRIPTION	REMARK
MISCELLANEOUS			
Δ	1-571-433-21	SWITCH, PUSH (AC POWER)	
Δ	1-765-286-11	CORD, POWER (KV-28LS36B/28LS36E/ KV-32LS36B/32LS36E)	
Δ	1-776-204-11	CORD, POWER (FILTER) (KV-28LS36U/32LS36U)	
	1-424-733-11	COIL, PFC CHOKE 65MMH	
Δ	1-453-308-41	TRANSFORMER ASSY, FLYBACK (NX4521//Z2B4)	
	1-693-555-14	FRONTEND (TUNER+IF) (KV-28LS36B/32LS36B)	
	1-693-556-14	FRONTEND (TUNER+IF) (KV-28LS36E/32LS3E)	
	1-693-557-14	FRONTEND (TUNER+IF) (KV-28LS36U/32LS3U)	
	1-529-408-11	SPEAKER (4.2x24CM)	
Δ	8-737-786-05	PICTURE TUBE (W66LLX060X) (KV-28LS36)	
Δ	8-735-079-05	PICTURE TUBE (W76LLZ060X) (KV-32LS36)	
Δ	8-451-521-21	DEFLECTION YOKE (Y28RVC3-B2) (KV-28LS36)	
Δ	1-451-520-31	DEFLECTION YOKE (Y32RVC3) (KV-32LS36)	
	1-452-896-11	COIL, NA ROTATION (RT-200)	
Δ	1-416-466-21	COIL, DEMAGNETIC (KV-28LS36)	
Δ	1-416-769-11	COIL, DEMAGNETIC (KV-32LS36)	
Δ	8-453-011-11	NECK ASSY, NA299-M	
Δ	1-251-946-11	CAP ASSY, HIGH VOLTAGE	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
	1-452-032-00	MAGNET, DISK; 10MM	
ACCESSORIES AND PACKAGING MATERIALS			
*4-395-957-01	BAG, PROTECTION		
*4-206-668-02	INDIVIDUAL CARTON (KV-28LS36)		
*4-205-934-03	INDIVIDUAL CARTON (KV-32LS36)		
*4-206-669-01	CUSHION, UPPER (KV-28LS36)		
*4-205-931-02	CUSHION, UPPER (KV-32LS36)		
*4-206-670-01	CUSHION, LOWER (KV-28LS36)		
*4-205-932-02	CUSHION, LOWER (KV-32LS36)		
4-206-095-62	INSTRUCTION MANUAL (ENGLISH)		
4-206-095-22	INSTRUCTION MANUAL (GERMAN/FRENCH/ITALIAN/DUTCH)		
4-206-095-12	INSTRUCTION MANUAL (GERMAN/GREEK)		
4-206-095-42	INSTRUCTION MANUAL (ITALIAN)		
4-206-095-52	INSTRUCTION MANUAL (DANISH/SPANISH/NORWEGIAN/PORTUGUESE/ SWEDISH/FINNISH)		
4-206-095-32	INSTRUCTION MANUAL (ENGLISH)		
REMOTE COMMANDER			
	1-476-702-12	REMOTE COMMANDER (RM-932)	

TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.



The TRACE interface connects to the PC's serial port. It provides connection to the TV's I²C bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

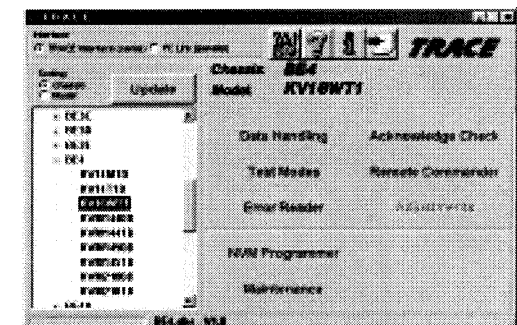
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the I²C bus
- Acknowledge check of all I²C devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:

- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.



Note: For workshops already using the existing I²C Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.

Partnumbers: TRACE Starter Kit (TRACE interface + software): 9-948-320-70
TRACE Software (for users of the I²C Link interface): 9-948-340-80
TRACE IR Add-on (IR interface + Remote Commander software): 9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT*.

* WindowsNT only supported with TRACE interface

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Sony UK
Service Promotions Dept.

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